

# MARINE RECORD

ESTABLISHED 1878.

VOL. XX. No. 13.

CLEVELAND---APRIL 1, 1897---CHICAGO.

\$2.00 Per Year. 10c. Single Copy

## LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

### PRESIDENT.

CAPT. JAMES W. MILLEN, Detroit, Mich.

### VICE PRESIDENTS.

J. S. Dunham,	Chicago.	Howard L. Shaw,	Bay City.
C. E. Benham,	Cleveland.	F. J. Firth,	Philadelphia.
David Carter,	Detroit.	L. S. Sullivan,	Toledo.
S. D. Caldwell,	Buffalo.	M. J. Cummings,	Oswego.
W. H. Wolf,	Milwaukee.	Geo. Berriman,	Erie.
W. C. Farrington,	Duluth.		

### SECRETARY.

CHARLES H. KEEP, Buffalo.

### TREASURER.

GEORGE P. MCKAY, Cleveland.

### COUNSEL.

HARVEY D. GOULDER, Cleveland.

### FINANCE AND EXECUTIVE COMMITTEE.

James Corrigan,	Cleveland.	W. P. Henry,	Buffalo.
John Mitchell,	Cleveland.	J. J. H. Brown,	Buffalo.
H. A. Hawgood,	Cleveland.	R. P. Fitzgerald,	Milwaukee.
Thos. Wilson,	Cleveland.	C. W. Elphicke,	Chicago.
M. A. Bradley,	Cleveland.	H. G. Dalton,	Cleveland.
J. C. Gilchrist,	Cleveland.	W. C. Richardson,	Cleveland.
L. C. Waldo,	Detroit.	B. L. Pennington,	Cleveland.
D. C. Whitney,	Detroit.		

### COMMITTEE ON LEGISLATION.

L. M. Bowers,	Cleveland.	Wm. Livingstone,	Detroit.
E. T. Evans,	Buffalo.	J. S. Dunham,	Chicago.
P. P. Miller,	Buffalo.	S. D. Caldwell,	Buffalo.
H. C. French,	Buffalo.	Jesse Spaulding,	Chicago.
Charles Paine,	Buffalo.	C. A. Eddy,	Bay City.
Edward Smith,	Buffalo.	Alex. McDougall,	W. Superior.
H. M. Hanna,	Cleveland.	F. J. Firth,	Philadelphia.
James Corrigan,	Cleveland.		

### COMMITTEE ON AIDS TO NAVIGATION.

Geo. P. McKay,	Cleveland.	W. M. Egan,	Chicago.
W. H. Becker,	Cleveland.	Frank Owen,	Ogdensburg.
C. E. Benham,	Cleveland.	A. W. Colton,	Toledo.
J. G. Keith,	Chicago.	James Davidson,	W. Bay City.
W. A. Hawgood,	Cleveland.	Alvin Neal,	Port Huron.
Thos. Wilson,	Cleveland.	M. M. Drake,	Buffalo.
John W. Moore,	Cleveland.	Philip Minch,	Cleveland.
W. A. Livingstone,	Detroit.		

### LAKE CARRIERS' MEETING.

A meeting of the executive committee of the Lake Carriers' Association was held at the office of Capt. James Corrigan on Tuesday afternoon. President James Millen of Detroit and Secretary Charles H. Keep of Buffalo attended the meeting. Considerable business was transacted, but the most important matter taken up was the spring schedule of wages. The outlook in the vessel business for the early part of the season is not very bright and in order to keep the boats running expenses will have to be reduced all around. The schedule adopted, which will go into effect at the opening of navigation, shows a reduction all around compared with the schedule adopted last season. If there is any improvement in business wages will be advanced, as vesselmen as a rule are in favor of paying good wages. The schedule adopted Tuesday is as follows:

	Per Month.		
	1st Class.	2d. Class.	3d. Class.
On steamers:			
First engineer	\$105	\$90	\$60 to \$75
Second engineer	70	65	50 to 60
Mates	75	65	50 to 60
Second mates	50	40	.. ..
Firemen	30	30	25 to 30
Wheelmen	30	30	25 to 30
Lookouts	30	30	25 to 30
Deckhands	15	15	15
Oilers	30	..	.. ..
Cooks	50	45	40
Helpers	15	12	.. ..
On Consorts:			
Mates	45	30 to 40	.. ..
Second mates	35	..	.. ..
Cooks	30	25	.. ..
Seamen	30	20 to 25	.. ..

The schedule of wages which prevailed last year is here-with presented that comparison may be made:

First class, chief engineers, \$112.50; second engineers, \$79. Second class, chief engineer, \$67.50. Third class, chief engineer, \$67.50 to \$84; second engineer, \$56. First mates, \$56 to \$79; second mates, \$39 to \$56; cooks, \$39 to \$56; helpers to cooks, \$11 to \$17; firemen, \$28 to \$34; wheelmen, \$28 to \$34; lookouts, 22.50 to \$34; deck hands, \$13.50 to \$17; oilers, \$28 to \$34.

The committee appointed at the annual meeting in January to try and secure a reduction in the cost of unloading ore from vessels asked for further time, as the ore men and dock managers will not be ready to do business until sales are made and carrying charges are fixed. Capt. John Mitchell, H. A. Hawgood and W. H. Mack were added to the committee. The members of the committee are confident of getting better rates this year. A. R. Rumsey will have charge of the shipping offices. The following assistants were appointed yesterday: J. W. Hanson and Robert Anderson, Chicago; Maynard Fisk, South Chicago; William Lemon, Milwaukee; William Fletcher, Buffalo; Patrick Mitchell, Toledo; Daniel Harrington, Ashland, and Charles F. Wall, Cleveland.

The speed of vessels passing Grosse Point came up and the prevailing opinion was that if any change was made loaded vessels should be allowed to go nine miles an hour and lights boats eleven miles per hour.

### EVOLUTION OF THE COAL BOAT.

Many years ago Pittsburgh coal was floated to New Orleans in flat-boats and barges in pairs, known in those days as "broadhorns," the propelling power consisting of side oars and worked by crews of men, all under the direction of a pilot, who steered the tow to New Orleans, assisted by the side oars, and carried by the strong current in the Ohio and Mississippi rivers. When tow-boats were introduced to handle these tows it was thought impracticable and believed by many that the tows would run away with the steam-boats. But the boats soon "caught on," and the days of floating "broadhorns" soon passed away and they became a thing of the past. Tow-boats commenced taking two, four, six and eight barges of coal South, and as time progressed, larger boats were built and heavier tows hitched to them, until ten or fifteen years ago, when a boat that took twenty barges South in safety was called a "record breaker." Nowadays a tow of from twenty to thirty pieces hitched to a tow-boat and taken south in safety is a common occurrence. Two years ago the big "Joe B. Williams" took the biggest tow of coal on record from this city to New Orleans. It consisted of forty-six coalboats. The river was then in about the same condition it is now, and the same tow-boat proposes to wipe out her own record by leaving here for New Orleans with forty-six coalboats—ten more boats than she took before when she broke all records. The tow covers 16 acres in the river and comprises 1,500,000 bushels of coal. It would take 2,000 cars to hold it, and, divided into 20 trains, it would take 100 locomotives to pull it.—"The Black Diamond," Chicago.

### A NEW CHART.

A chart of Green Bay and its approaches, made on a large scale, has just been published by the United States hydrographic office. The chart is corrected to March 1, 1897, and takes in with Green Bay, the west shore of Lake Michigan from Manistique to Kewauunee. This will be of great value to vessel men. Soundings are in feet and in addition there is a scale of statute miles attached. It is so complete in detail that it is larger than the single sheet charts of Lake Superior or Lake Michigan, and is published in the usual excellent form now customary with the hydrographic office relative to lake work.

### GEORGIAN BAY SURVEY.

The survey of the Canadian shores was primarily a result of the loss of the steamer Asia with many lives on the Georgian Bay in the fall of 1882. Mr. Dawson of Algoma brought the matter up in the Canadian House of Commons. He contended that another survey should be made of the Georgian Bay. The government thought favorably of the matter, and in 1884 purchased the steamer U. S. Grant from Capt. Murray for a survey boat and had her fitted out at St. Catharines, Ont., for that purpose. She was rechristened the Bayfield, after Admiral Bayfield, who, with a staff of assistants, was sent out by the British Admiralty to survey the Canadian coast line about the year 1815. The Bayfield is 126 feet over all and of 100 tons register. The boat's crew consists of Capt. McGregor and about twelve men. W. J. Stewart, hydrographic surveyor, and his two assistants, Messrs. Fraser and Anderson, constitute the survey staff on board.

The work was begun under Capt. Boulton, who was in charge from 1883 to 1893. He was then succeeded by his assistant, Mr. Stewart, who has been in charge ever since. For eleven years the boat has been employed in surveying Georgian Bay, the last two seasons in service on Lake Erie. One more season's work will complete the Lake Erie survey, which is a simple task in comparison with the work on Georgian Bay. The latter is claimed to be the most difficult piece of survey in the world. This is particularly applicable to the northeastern portion. The present survey is purely hydrographic and not as accurate in detail as the survey made by the United States in 1875 and 1876 and which embraced part of the Canadian shores. The marine and fishery department at Ottawa has full control of the work and the Bayfield is the only survey boat in the employ of the Canadian government. The staff usually put in the winter at Ottawa. They begin their work about the 1st of May and finish about the 20th of October. After the season's work charts are drafted at Ottawa and a copy sent to the British admiralty, which has a copper plate made of them and from it charts are printed for sale.

### THE AMERICAN MERCHANT MARINE.

We know not for what reason or why an eastern contemporary should endeavor to tell the truth so succinctly as the following would appear, yet we know that they are about if not quite all right.

Do you know that but one steel ship was ever built in America and that she was the last full-rigged ship ever built here, and that her name is Dirigo?

That but two steel ships ever flew the American flag, and they are the Dirigo and Kenilworth, the latter denationalized?

That the Clarence S. Bennett, May Flint and Tillie E. Starbuck are the only iron ships flying our flag?

That the Annie E. Johnson and Archer are the only iron barks having American registers and that both of them were built in England?

That the Josephine is the only iron schooner afloat that has the right to hail from an American port?

That but eleven steamers flying the American flag trade between America and Europe, and that they are the St. Louis, St. Paul, New York, Paris, Pennsylvania, Indiana, Ohio, Illinois, Conemaugh, Miami and Metteawan, and that five of them were built in England?

That most all the best steamships in our merchant marine were built on the Delaware?

That America has not 3,000 vessels going to sea, and that all steamers, ships, barks, barkentines, brigs, schooners and sea-going coal barges are included, and that this includes the Atlantic, Gulf and Pacific coasts?



## NEWS AROUND THE LAKES.

## DETROIT.

Special Correspondence to the Marine Record.

Capt. George P. McKay, Charles H. Keep and W. C. Richardson, of Cleveland, were here this week to confer with Col. Lydecker, Corps of Engineers, U. S. A., in regard to aids to navigation within his district.

The Longshoreman's Union, No. 10, of this port, has adopted the following price scale: One and 2-inch white pine, per thousand, 25 cents; 1 and 2-inch Norway pine, 28 cents; 1 and 2-inch hemlock, 30 cents; strips, 28 cents; cut offs, shorts and culls, 28 cents; hardwood, 1 and 2-inch, 30 cents; over 2 inches, 35 cents; lath on deck, 5 cents; in hold, 6 cents; shingles, 5 cents; basswood, 1 and 2-inch, 25 cents; timbers, 6x6 and undr, 30 cents; over, 35 cents; timbers in hold, 45 cents; 3-inch plank, 30 cents; car sills, 40 cents; tamarack and hemlock ties, 2 cents each; cedar ties, 1 1/4 cents each; cedar posts, dry, peeled, 25 cents per cord; cedar posts, rafted and unpeeled, 30 cents; grape posts, 40 cents per cord; cordwood over the rail, 25 cents per cord; telegraph arms, 28 cents per thousand.

The following steamers have been chartered by different lake lines for this season: The Clover Leaf line will have the Blanchard and F. & P. M. No. 5, the same as last season. The Lackawanna Line will charter the Arthur Orr, Cuba, Florida and Wyoming as before and also the G. J. Gould, and if another boat is taken it will be the Chili. The Western Line has taken the Gilbert and eKarsarge again, but has thrown over the Gratwick on account of some misunderstanding, it is said, between Capt. Wolvin and Capt. John Mitchell. The Soo Line will have the two new Rhodes boats and the Pidgeon and Nebraska; and John Gordon will run the Globe, J. W. Moore and two more not yet named. Whether the Anchor or Northern Line will charter anything is not discovered. The line managers are holding rate meetings, and are not ready to make any positive announcements.

## CHICAGO.

Special Correspondence to the Marine Record.

Capt. James S. Dunham returned on Friday from a short vacation in California.

James A. Calbick & Co. chartered the steamer City of Glasgow for corn to Buffalo at 1 1/8 cents.

Capt. W. Cunningham, of the steamer New Orleans, arrived here Monday to take charge of that steamer.

Capt. Wm. Anderson, of the steamer City of Berlin, returned Sunday from an extended tour in California.

The schooner Apprentice Boy is receiving repairs and re-calking in the Independent Tug Lines' floating dry dock.

Capt. Daniel McLeod, of Detroit, and A. A. Parker, of the firm of Parker & Millen, Detroit, were in this city Tuesday.

Capt. James Greene, of the Lackawanna Line steamer Scranton, arrived here Saturday to take charge of the steamer.

The Dunham Towing & Wrecking Co. towed the steamer City of Berlin to the St. Paul elevator to load a cargo of oats.

The larger portion of the steamers in winter quarters here are being fitted and will be ready to go into commission by April 10th.

Capt. John Nicholson will have charge of the steamer Isaac Watson Stephenson and consorts Advance and Alert for the season of 1897.

At the Masters' and Pilots' Chicago Harbor, No. 33, held Wednesday afternoon, March 24th, Captains Frank Kohnert and Archie Hitchcock were initiated as new members.

The schooner R. Kanters was the first of the lumber carrying fleet of schooners to leave Chicago this season. She having towed down the river and took her departure for Frankfort, Mich., for a cargo of slabs.

Capt. William Evans, of Chicago, has purchased an interest in the steamer Francis Hinton. He will command her and has contracted to carry lumber between Menominee, Mich., and Chicago.

Grain rates are flat at 1 1/2 cents on corn to Buffalo, with a very light demand for boats. Vesselmen seem disposed to let their boats remain in winter quarters until ore cargoes are ready, rather than accept grain at less than 1 1/2 cents.

The schooner Ottawa has been purchased by Capt. Wm. Pugh, of Racine, for \$700. She was towed down the river Tuesday and went to Racine, where she will undergo considerable repairs. The Ottawa was built in 1874 at Grand Haven, Mich., and her carrying capacity is 163 gross tons.

The steamer City of Glasgow arrived here light, under steam, from Milwaukee, Sunday evening. The Independent Tug Line towed her to the Wabash and Indiana elevators to load corn. They also towed the Lehigh Valley Line steamer Saranac and the schooner Thos. Howland to Miller Brothers' shipyard.

Shipments of anthracite coal to Lake Michigan ports will be very small until midsummer. It is estimated that the coal companies are carrying over into another season about 250,000 tons of hard coal on Chicago docks. Other Lake Michigan points are as well supplied. Nothing but extremely low rates with prospects of much higher prices

later in the season will cause the coal companies to do anything during April and May. Vesselmen need not expect over thirty cents per ton on the few scattering cargoes which will be moved during April and May. In soft coal in this city nothing is being done except figuring. No contracts have been reported.

The Lake Michigan Trans. Co. have fitted out their car ferries. They have appointed Capt. Edward Evans, of Chicago, master of their fine new steel tug Fischer, and Capt. Thos. Dunn, of Milwaukee, to their tug J. C. Ames. The tugs and car ferries will go into commission at an early date.

P. H. Fleming & Co. chartered the steamer City of Berlin for oats to Port Huron at 1 1/4 cents. P. H. Fleming, manager of the Owen Line, has arranged to run the steamers Parks Foster and Ira H. Owen in connection with the Baltimore & Ohio Railroad, with grain and package freight between Chicago and Fairport. The steamers are now being fitted out at Cleveland with entire package freight equipments.

There are afloat in the harbor of South Chicago 2,809,313 bushels of grain, which, added to the 4,019,500 bushels in the Chicago River on Saturday last, makes a grand total of 6,828,843 bushels of grain now in the holds of vessels ready for transportation. Deducting this amount from the total capacity of the well known grain carriers composing the grain fleet, it leaves something less than 2,000,000 bushels yet to be chartered, with about four times that quantity of grain in the elevators to be shipped. This in itself is a promising outlook for the grain fleet. The 2,809,843 bushels afloat at South Chicago are divided as follows: Oats, 1,628,562 bushels; corn, 913,781 bushels; barley, 267,000 bushels. It is to be carried by a fleet of twenty-three of the largest sized lake boats.

## BUFFALO.

Special Correspondence to the Marine Record.

A canvass of the lumbermen finds next to none of them ready for stock, and few who will receive much during the first half of the season.

There is no business of any account in sight yet, and the indication of a very early opening as regards ice is all right enough, but I would say a late one as regards cargoes. There is no reason for fitting out at the present time unless special charters have been made of which I have not learned at present.

The harbor tug lines are fitting out. The steamer Juniata has come out of the dry dock. There are now only the Maytham, C. B. Lockwood and the schooner St. Peter loaded with grain, the 118. Rappahannock and Ketcham having been taken out last week. The Progress and Armenia are still partly loaded; as the shipper has taken out a few car loads whenever he wanted it. There is an unusual amount of repair work in progress.

Capt. A. A. Parker was down from Detroit this week. He says he has a little ore left over from last season, but has taken nothing new. He is certain that there will be more than the usual amount of ore to carry, but the rate will be low, though the longer the shippers hold off the more they will have to pay. It is estimated that there will be 12,000,000 tons of ore to carry this season, which is more than has ever been carried before in any single season.

A topic of considerable importance in local marine circles concerns the Great Lakes Steamship Company, of which Mr. John Gordon is the general manager. This line will cut quite a figure this season and promises to be a success. The line comprises four first-class steamers, with a total capacity of 10,400 tons. These steamers will connect with the Wisconsin Central Railroad lines for the transportation of cargoes between Buffalo, Cleveland, and other Lake Erie ports and points east thereof, and St. Paul, Minneapolis, Minnesota Transfer, Eau Claire, Chippewa Falls, Fond du Lac, Oshkosh, Neenah, Menasha, and other points, via Manitowoc, Wis. Assurance is given that the rates will always be as low as via other first-class lines, and the service such as will commend itself by its promptness and regularity.

Th outlook for an early opening of navigation is favorable, but that is just what vesselmen do not want. The condition of the ice at this end of Lake Erie is soft and badly broken up. A test was made on Monday when the tug Grace Danforth of Hand & Johnson's line steamed out and "walked right into it" for about a quarter of a mile. The test was made partly for the benefit of the Cleveland & Buffalo Transit Co. Capt. Linn, of the Danforth, showed General Agent Fisher, of the C. & B. line, vesselmen and newspaper representatives that a steamer could force her way through the ice if necessary. The ice at this end of the lake is probably eight to ten inches thick. From five to six inches seems to be solid, but the surface is considerably honeycombed. It is generally believed that a stiff easterly wind and warm rain would break up the field completely, and such will no doubt be the case before the end of the week. We are having singularly fine weather here and an early resumption of marine business is evident all round.

Capt. J. C. Fitzpatrick, manager of the Woodlawn Beach Co., and formerly agent of the C. & B. Line, had the following to say this week in regard to the excursion business of the port: "Referring to a recent interview with Capt. J. J. H. Brown, of this city, regarding Buffalo excursion docks, permit me to say that some of his statements are not fully commented upon. Take the case of the C. & B. Line, which is entirely different from the

excursion business, as they carry daily a large quantity of freight from the first of April till late in November, requiring large warehouses, offices, baggage rooms, etc. I cannot see why this line is worth more to Buffalo than the combined excursion interests. If the C. & B. Line did not exist, Buffalo would not suffer to any extent, as other lake lines and the numerous railroads would take care of the business which they did previous to the starting of this line in 1893. While on the other hand, the excursion steamers furnish pleasure and near-at-home vacations for the many thousands that can ill afford longer and more expensive trips. The city owns the dock at the foot of Main street, and what better use can be made of it than accommodating the many residents of this large city of Greater Buffalo by giving them the most convenient location for these inexpensive outings, which are certainly health-giving and are wanted and enjoyed each season by over a quarter of a million people?

## CLEVELAND.

Special correspondence to the Marine Record.

Capt. S. Stratton, who was in the Menominee line last season, will sail the steel steamer J. J. McWilliams this year.

Capt. Frank Jennings has bought a quarter of the schooner H. G. Cleveland from Mrs. Anson Titus for \$500.

The passenger steamer City of Buffalo leaves Detroit this morning. She will be placed on the Buffalo route next week.

The daily service between Cleveland and Detroit has been inaugurated, the steamer City of Cleveland having been put on the route.

F. C. Goodman, of this port, managing owner of the Keystone and the Masten, has purchased the steamer Wetmore and the Brunette.

Capt. Harvey Stewart will take Capt. Bernard Nelson's place in the steamer W. F. Sauber. Capt. Nelson will sail the Bessemer steamer Robert Fulton.

The steamer State of New York will be placed on the Cleveland and Toledo route on April 1. It is expected that the Put-in-Bay season will open on June 1.

The lighthouse board has awarded to Samuel F. Hodge & Co., of Detroit, a contract for a new boiler and general repairs on the tender Warrington at their bid of \$6,800.

Thousands of visitors and sightseers were in attendance at the launch at the Globe Iron Works Co. on Saturday morning. The weather being so excellent, many ladies were present, besides the general retinue of marine men.

The schooner Margaret Olwill and the steamer Albert Y. Gowan have been placed in the limestone trade between Kelley's Island and this port. They find no ice to prevent them making regular trips.

Isaac M. Bartle has been appointed general passenger agent for the Northern Steamship Co. The office has been vacant since last fall, when A. A. Heard retired. Mr. Bartle has been connected with the company for a number of years.

The steamer Sate of New York will make her first trip to Toledo on Thursday night, and until June 1 she will leave this port on Tuesdays, Thursdays, and Saturdays at 10 o'clock. On June 1 daily trips to Toledo will commence, and the Put-in-Bay excursions will also begin on that date.

Mr. Kay, secretary of the Riverside Iron Works, Sam'l F. Hodge & Co., Detroit, spent a few days in the city last week during his honeymoon. Mr. Kay visited the launch at the Globe Iron Works Co.'s shipyard on Saturday, and met quite a number of his marine friends, he also visited some of the most prominent offices at this port in the interests of his firm and according to his own words, spent a very enjoyable and profitable time.

Owing to labor trouble the steamers St. Paul and Minneapolis, building at Chicago for R. R. Rhodes, and others of this port, will not be launched as intended. The event has been postponed for several days, but it is thought that the vessels will be ready for service on May 1, according to contract. The Soo Line will operate the boats. James Jackson will be master of the St. Paul and Engineer John Davidson will have charge of the machinery. Capt. William Jamieson and Engineer Bion St. Bernard will be on the Minneapolis.

Formal announcement of the opening of the season was made this week by the Cleveland & Buffalo Transit Company. The City of Buffalo will leave Cleveland on her inaugural trip Saturday evening, April 3, and will leave thereafter on Tuesdays, Thursdays and Saturdays. The steamer will depart for Buffalo on Mondays, Wednesdays and Fridays until May 1, when the daily service, excepting Sundays, will begin. Boats will run on Sundays after May 30. This season's schedule gives half an hour more for the eastward trip than was allowed last year.

Cleveland marine men are endeavoring to have Captain Daniel McLeod, formerly connected with the Inland Lloyds Vessel Register as manager, appointed Commissioner of Navigation as the successor of E. T. Chamberlain. Captain McLeod has sailed the seas and the lakes. His connection with the vessel-owners and underwriters made him known all over the lakes. If not appointed to the commissionership Captain McLeod will devote his time in surveying vessels, having opened an office in this city, and he is certain of having a large practice as his unbiased judgment is relied upon.

Capt. Dan McLeod, late manager for the Inland Lloyd's



Classification Society, is a candidate for the office of commissioner of navigation, and is being ably supported by local influences. When the change occurs as I suppose it inevitably will, Capt. Dan will be found a favorite in the race, although there are quite a number of talented men running for the office, which by the way, is appointive. There is no doubt but that Capt. McLeod is well qualified to fill this important position if it falls to his lot and personally I would say that there is no more fitting candidate in sight, besides, he would give the lake marine a chance.

The steel schooner Sidney G. Thomas, of the Bessemer fleet, was launched from the yards of the Globe Iron Works Company, Saturday, at 11 o'clock. Miss Belle Barrett, daughter of G. H. Barrett, of Glenville, performed the christening ceremony. The new boat, which will be ready for service by May 1, is 378 feet long, 44 feet beam and 26 feet deep. She is the most modern of lake barges. She will have three masts and will be schooner rigged. Her donkey boiler will be located forward, instead of aft, as in most of the lake barges. It has not been decided yet which of the Bessemer steamers she will tow with.

The Cuddy-Mullen Coal Co. will this season operate the Anthony and Watson coal docks at Detour and also the Shipman docks at Amherstburgh. When the addition to their dock in the outer harbor it will be 670 feet long. The Sandwich dock is to be enlarged 400 feet and new pockets put in at Detour and Amherstburgh. It would now appear as if the Cuddy-Mullen Co. were to be the chief factors in fueling at a number of lake ports and I can say that the principals of the firm are wide awake business men who will not permit their patrons to go to leeward, furthermore new appliances, hoists and chutes are to be introduced at all of their fueling stations.

Capt. Charles Motley, of the life saving station, received instructions Wednesday to open the station on Saturday. Mr. E. C. Chapman, superintendent of the life saving district in which Cleveland is located, stopped in the city for an hour and was met by Capt. Motley. Superintendent Chapman did not believe that the condition of the lake called for a life saving crew at this time, but when informed of vessel business being done, ordered the station opened. The service will begin with six men, as follows: Arnold King, No. 1; James Sutherland, No. 2; Peter Coughlan, No. 3; James Richards, No. 4; Frank Burbank, No. 5; George Warner, No. 6. The majority of the crew was in service last year.

Mr. W. C. Farrington, vice president of the Northern Steamship Company, it is understood, will during the coming season have immediate charge of the traffic affairs of the steamship company, though he will acquire the title of general manager, while that of general traffic manager will be abolished. Farrington will sever his connection with the Eastern Minnesota. As a matter of report other changes are as follows: The present general freight agent will continue in power, and Mr. I. M. Bartle, formerly chief clerk of the passenger department, will become general passenger agent, and Mr. J. J. Hill, Jr., will assume the title of general manager of the Eastern Minnesota.

The following data, covering a period of twenty-five years, have been compiled for the Weather Bureau records at this port: Temperature for month of April for twenty-five years: Mean or normal temperature, 45 degrees. The warmest month was that of 1896, with an average of 53 degrees. The coldest was that of 1874, with an average of 40 degrees. The highest temperature was 85 degrees on April 30, 1872 and April 18, 1896. The lowest temperature was 15 degrees on April 17, 1875. Average date on which first "killing" frost occurred in autumn, October 11. Average date on which last "killing" frost occurred in spring, May 1. The prevailing winds have been from the northeast. The highest velocity of the wind was 56 miles from the west on April 2, 1896.

#### ST. CLAIR.

Special correspondence to the Marine Record.

William J. Whalley of this port is to ship as carpenter on the large passenger steamer North West.

The steamer Douglass is being fitted out and will leave Detroit for Alpena, Rogers City and way ports April 1st.

The following is a complete list of St. Clair's vessel appointments:

Captains—W. C. Brown, North Land; C. H. Chamberlain, E. M. Peck; E. B. McQueen, Senator; R. O'Connor, Flint; Fred Hoffman, Masaba; Myron Parsons, Gratiot; C. C. Balfour, Eddy; W. McGregor, Pathfinder; A. P. Gallino, Street; Wm. Crockett, Toledo; Fred Meno, Douglass; Eugene Hayward, Pilgrim; W. Landon, Merrick; Jos. Lowes, Tempest No. 2; J. C. Pringle, Penelope; Harry Dale, Welcome; Forest Langell, T. Kane; John Schlinkert, Grace Darling.

Engineers—J. S. Balfour, Merida; P. Merrill, Flint; Joe Paya, Pilgrim; J. Westrick, Welcome; W. F. Leach, Toledo.

Stewards—S. Murray, Douglass; Harry Thomson, Pilgrim; A. Shafer, Unique.

Clerks—A. N. Knapp, Pilgrim; H. W. Knapp, Douglass.

Mates—A. Morrison, Flint; A. Tappin, Masaba; Wm. Brown, North West; Chas. Dale, Pilgrim; Jos. Rinn, Newaygo; Eber Proctor, Kalkaska; Wm. Greening, Roman; G. Bugg, Zenith City; Fred West, Cuba; Geo. King, Greyhound; M. Chamberlain, Mariposa; George Seaford, Eddy; Worth Meno, Douglass; Geo. Hayward, Street; E. K. Hungerford, Langell Boys; Andy Lawrence, Curtis; H. W. Robertson, Peck; John Hartman, North West; John Mussman, Buell.

Schooners—M. Anderson, Shawnee; C. W. Recor, Golden Rule; W. Smith, Hanaford.

#### PORT HURON.

Special correspondence to the Marine Record.

Captain J. M. Jones, Jr., arrived here this week to fit out the barge John Breeden.

Capt. E. M. Murdock has left this port for Manitowoc to begin fitting out his steamer.

The Union Dock & Storage Co. has purchased the cargo of coal in the schooner St. Lawrence, lying in Black River.

Chester Kimball, a pioneer resident of Algonac, died on Wednesday last at the advanced age of 96 years. Captain Kimball sailed away back in the forties when the towing was done by side-wheel boats. He had resided in Algonac for over sixty years.

Captain Charles Black, formerly of the Porter Chamberlain, will have charge of the Simon Langell this season. Comstock Bros. have purchased a large interest in the Langell and Arenac.

The steamer Arundel is making regular trips between here and Detroit. There is no ice in Lake Huron and very little in St. Clair river and Lake St. Clair. Last season the steamer Arundell did not arrive up from Detroit until April 2 and commenced making regular trips on April 3. The first boat to arrive down from Lake Huron ports was the steamer Pilgrim on April 8.

Springfield, Ill., March 31, 1897.

Special correspondence to the Marine Record.

Senator Bogardus' waterway bill (S. B. 33.) has been favorably reported from the committee on waterways and drainage, and referred to the committee on appropriations. The bill is the same one the Record published in full some issues ago.

CLARENCE J. ROOT.

#### FLOTSAM, JETSAM AND LAGAN.

A bill to authorize the construction of a new bridge across the St. Lawrence river at Cornwall, N. Y., has become a law.

An effort will soon be made to have a new bridge built over Howard's Pocket, Superior, Wis., as soon as the big Duluth-Superior bridge is finished.

Work on the new elevator of the Northern Steamship Company at Buffalo is going ahead with all proper dispatch. The contractor has asked for proposals for about 900,000 feet of oak for docking and will need 175,000 feet of elm or tamarack for piling.

A new company, to be known as the Duluth Dredging & Dock Co., has been formed in Duluth, and the new concern has secured the contract for dredging 13,000 cubic yards of earth in the harbor at Grand Marais. The new company has the following officers: President, Robert Smith; vice president, Frank McCormick; secretary and treasurer, William Clifford. Barnet Cook and Frank Hanks are members of the company also.

Judge Cox, of the United States district court at Utica, N. Y., yesterday dismissed the libel suit of the Union Transit Co., owners of the steamer John V. Moran, against the steamer Maurice B. Grover for damages by collision at Sailor's encampment, Soo River, May 7, 1896. The libel was for damages to hull and cargo of the Moran and amounted to about \$35,000. The Moran was aground near the cut with sailing lights up and an obstruction in the channel. No warning of her situation was given, and it was claimed that she blew a whistle which was interpreted as a signal to come on. When the master of the Grover discovered that the Moran was aground he backed his boat, but too late to avoid a collision.

Two tugs are in the course of construction at the Owen Sound Dry Dock. One is being built to the order of Messrs. J. & C. Noble, and the other for Messrs. Ainsworth & Ganley, of the Soo. The dimensions of the former are, 70 feet length over all, 14 feet beam, and 6½ feet depth of hold. The machinery, which has been

in the tug Grace Darling since that boat came out, will be put in the new hull. Messrs. Ainsworth & Ganley's tug will be 45 feet over all, 12 feet beam, and 6 feet depth of hold. Both are to be completed at the opening of navigation.

The old parish clerk was a sure perverter when an opening was given. A rector told his clerk to announce that during the next six weeks—probably during the Lenten season—the Vicar of— and himself would preach "alternately" on Sunday mornings. The clerk's perversion took the form of an announcement that these reverend gentlemen would preach "to all eternity." A vicar of Goostrey, in Cheshire, said to his clerk: "Give out that there will be no service here on Sunday afternoon next, as I shall be officiating at Peover." The moment came and the announcement concluded, "as the vicar will be a-fishing at Peover."

#### APPOINTMENT OF OFFICERS.

Wm. Dulac, Mt. Clemens, Mich.: Steamer F. R. Buell—C. H. Woodgrift, master; John Diehl, engineer. Steamer A. Weston—M. Hyde, master; Ed Cottrell, engineer. Steamer Canisteo—W. J. Lynn, master; W. P. Boynton, engineer. Steamer Norwalk—E. F. Matteson, master. Steamer C. A. Street—A. P. Gallino, master; Perry Cossairt, engineer. Barge J. B. Lozen—Ed Moore, master; barge J. Godfrey—J. B. Lozen, master; barge A. Stewart—John Detroit, master; barge Eleanor—Frank Dubay, master; barge Jennette—Wm. Dubay, master; barge Elvina—Wesley Brown, master; barge Fulton—Frank Laforge, master; barge S. B. Pomeroy—Wm. Campau, master.

Manager Douglas, of the Western Line, announces the following appointments: Arabia—Captain, Robert Murray; engineer, Patrick Welch. Badger State—Captain, F. D. Osborn; engineer, Thomas Lynch. Boston—Captain, Dugald Buie; engineer, Frank Miller. Buffalo—Captain, Patrick Shea; engineer, William McNulty. Chicago—Captain, F. J. McCabe; engineer, William Tibby. Commodore—Captain, Thomas Slattery; engineer, James Brooks. Harlem—Captain, Donald Gillies; engineer, Henry Hess. Hudson—Captain, A. J. McDonall; engineer, Moses Trouton. Milwaukee—Captain, Michael Nolan; engineer, John Rainey. Mohawk—Captain, Valentine Jones; engineer, M. J. Laney. Montana—Captain, S. R. Jones; engineer, James Walker. Syracuse—Captain, John Fisher; engineer, J. W. Mark. Vanderbilt—Captain, Neil McCormick; engineer, Fred Hale.

J. Emory Owen Trans. Co., Detroit: John Owen—E. T. Thorp, master; S. L. Phillips, engineer. J. Emory Owen—M. Tinney, master; M. Delaney, engineer. Michigan—F. J. Cadotte, master.

Marquette appointments are: Tug Gillen—Captain, J. Devaney; engineer, James Glode. City of Marquette—Captain, Alfred Taylor; engineer, Alfred Cady.

The following appointments of masters and engineers on the Soo Line steamers are as follows: Nebraska—Captain, Peter Thompson; engineer, Joseph Tailor. John Pridgeon, Jr.—Captain D. N. Sherwood; engineer, John Morgan. St. Paul—Captain, James Jackson; engineer, John Davidson. Minneapolis—Captain, William Jamieson; engineer, B. St. Bernard.

The St. Paul and Minneapolis are new vessels, not launched yet, but will be ready for service early in the season. The boats are under construction at the Chicago Shipyard. It is expected that both vessels will be launched some time during April.

Anchor Line appointments: India—Captain, P. O'Neil. China—Captain, Charles Christy. Japan—Captain, John Doherty. Alaska—Captain, E. Martin. Wissahickon—Captain, John McCarthy. Delaware—Captain, A. McKenzie. Conestoga—Captain, H. Cronkheit. Lycoming—Captain, L. Wright. Conemaugh—Captain, F. Bloom. Lehigh—Captain, J. H. Berow. Clarion—Captain, Charles Nelson. Susquehanna—Captain, M. Riley. Codorus—Captain, D. Ryder. Mahoning—Captain, Joseph Corcoran. Schuylkill—Captain, H. O. Miller. G. Campbell—Captain, A. Peters. Juniata—Captain, George Delaney.

#### VESSEL FOR SALE.

Excursion and freight steamer Canadian.

Keel about 130 feet; beam 30 feet. Trout propeller wheel, speed about 12 miles. Licensed to carry 492 passengers. Company retiring; will sacrifice at \$5,000. Thos. Davies & Co., Brokers, Toronto, Can.



### AMERICAN HISTORICAL ASSOCIATION.

Agreement of 1817—Reduction of Naval Forces Upon the American Lakes.—By J. M. Callahan, of Johns Hopkins University.

(Continued.)

On November 18 Mr. Bagot informed Secretary Monroe that no cannon had been placed in position at Fort Malden as was represented, but that it appeared from the reports sent him that the officer commanding on Lake Erie had "misconceived the nature of his instructions" and considered that all vessels passing under Fort Malden should be visited. The commander in chief on the lakes revoked such orders at once, and every means was taken to prevent a similar occurrence. The orders sent by the influence of Lord Castlereagh had also reached Canada by this time, and the consequent restraint on the conduct of the officers on the lakes would tend to secure peace and tranquility in that quarter. All these measures doubtless produced the salutary effect intended by them. Mr. Bagot was assured (November 29) that corresponding orders had been given and would be repeated and enforced by the United States Government.

In the meantime (November 4) Mr. Bagot had furnished the Secretary of State with "an account of the actual state of His Majesty's naval force upon the lakes," and stated that further augmentation was suspended until the British Government reported upon the proposal of August 2. Mr. Monroe at once (November 7) furnished the former with the statement of the United States naval force in the same region, and had orders given "to prevent any augmentation of it beyond the limit of the British naval force on those waters. Mr. Bagot noticed that no force for the upper lakes was given in the statement sent him, but was informed that it had been included in the force mentioned for Lake Erie. It appears that there was no further correspondence between Bagot and Monroe concerning the matter.

The reciprocal and definite reduction of the naval force on the lakes did not occur until after Monroe had become President the next year. The Prince Regent having, in the meantime, agreed to the proposition of August 2, 1816, Mr. Bagot notified Mr. Rush (who was acting as Secretary of State until Mr. Adams could arrive from London), and on the 28th and 29th of April, 1817, a formal agreement was entered into by exchange of notes. It was practically the same as the proposed project of August 2, and could be annulled by either party's giving a six months' notice. The British Government had already issued orders to the officers on the lakes directing that the limited naval force should be restricted to such services as would "in no respect interfere with the proper duties of the armed vessels of the other party." By the request of Mr. Rush (April 30), orders to the same effect were issued on May 2 by Mr. Crowninshield, Secretary of the Navy, to the American commanding officers at Erie, Pa.; Sacketts Harbor, N. Y.; and Whitehall, N. Y. By these orders the schooner Lady of the Lake was assigned to Lake Ontario, the schooners Porcupine and Ghent to the upper lakes, and the galley Allen to Lake Champlain.

The agreement between Rush and Bagot became effective at once upon the exchange of notes. There is no evidence that Great Britain gave to it the formalities of a treaty, and it was not till April 6, 1818, that President Monroe formally notified the Senate of the United States of the arrangement and submitted it to its consideration whether it was "such an arrangement as the Executive is competent to enter into by the powers vested in it by the Constitution, or is such a one as requires the advice and consent of the Senate, and, in the latter case, for their advice and consent, should it be approved." The approval and consent of the Senate was given on April 16, with no dissenting vote and it was recommended that the arrangement be carried into effect by the President. The agreement, the full text of which was printed in the Record of March 25, was proclaimed by President Monroe on April 28, 1817.

It was the impossibility of getting the vessels from the lakes to the sea which made it necessary to dismantle them on the lakes. This work appears to have been done promptly. Soon only the pieces of hulks were left as a reminder of the former warring fleets. In fact, the forces on each side declined to "almost complete disappearance." By 1820 feelings of danger had decreased so far that the House of Representatives refused to consider a resolution which proposed a Western depot for arms "convenient to those points which are most vulnerable to the enemy." In 1822( Mr. Cooke, in the House, understand-

ing that most of the vessels on the lakes were sunk and "none fit for service," though it seemed that the salaries of officers and men did not have a corresponding decline, desired an inquiry into the subject. By 1825 public vessels had practically disappeared. In 1826 affairs were so "entirely safe" with Great Britain that the Detroit garrison was removed.

### THE COAL TRADE OF BUFFALO.

The following is the official statement of the coal trade of Buffalo for 1896 and preceding years, as compiled by William Thurstone, secretary of the Merchants' Exchange:

EXPORTS BY LAKE.				
	1893	1894	1895	1896
Anthracite, net tons.....	2,681,173	2,475,255	2,612,768	2,379,068
Blossburgh, net tons.....	7,500	7,500	6,000	6,000
Bituminous, net tons.....	15,000	25,000	2,000	15,000
IMPORTS BY RAILROADS.				
	1893	1894	1895	1896
Anthracite, net tons.....	4,700,000	4,230,000	4,750,000	4,550,000
Bituminous, net tons.....	2,896,614	2,280,470	2,727,308	2,661,840
Blossburg, net tons.....	25,000	25,000	25,000	25,000
RECAPITULATION.				
TOTAL IMPORTS.	1893	1894	1895	1896
Anthracite, canal, net tons.....	70,546	42,130	14,038	38,061
Anthracite, rail, net tons.....	4,700,000	4,230,000	4,750,000	4,550,000
Bituminous, lake, net tons.....	15,000	25,000	2,000	15,000
Bituminous, rail, net tons.....	2,896,614	2,280,470	2,727,308	2,661,840
Blossburg, rail, net tons.....	25,000	25,000	25,000	25,000
TOTAL EXPORTS.	1893	1894	1895	1896
Anthracite, canal, net tons.....	19,336	8,840	1,376	1,104
Bituminous, canal, net tons.....	19,336	8,840	1,376	1,104
Anthracite, lake, net tons.....	2,681,173	2,475,255	2,612,768	2,379,068
Blossburg, lake, net tons.....	7,500	7,500	6,000	6,000
Bituminous, lake, net tons.....	15,000	25,000	2,000	15,000

#### ANTHRACITE WHOLESALE CIRCULAR PRICES.

The following were the wholesale prices of anthracite coal per 2,240 pounds, during 1896:

Free on Board Vessels at Buffalo.					On Board Cars at Buffalo or Suspension Bridge.				
1896	Grate	Egg	Stove	nut	1896	Grate	Egg	Stove	nut
January 1.....	\$4.45	\$4.70	\$4.70	\$4.70	January 1.....	\$4.15	\$4.40	\$4.40	\$4.40
June 1.....	4.55	4.80	4.80	4.80	June 1.....	4.25	4.50	4.50	4.50
July 1.....	4.80	5.05	5.05	5.05	July 1.....	4.50	4.75	4.75	4.75
Sept. 1 to close of yr.	5.05	5.30	5.30	5.30	Sept 1 to close of yr.	4.75	5.00	5.00	5.00

### SHIPYARD WORK AT WHEELER'S.

Wheeler and Co. put on several large gangs of men this week, making a total of about 750 men at work in the two yards. Of this number 200 men are riveters, divided into 50 gangs of four men each. With this force of riveters the plates on ships No. 120 and 121 are going on very fast. The two Brown hoists in the old yard, which are working on the steamer, are kept very busy. The traveling crane used in lifting the heavy plates from the cars to the shops is also in constant use. Steel material is arriving from the Carnegie works in large quantities each day. Eleven cars of the finest oak were received at the yard in one day, to be used in the construction of the bulwarks of steamer No. 121. Eight more cars of the timber will be received later. The work on the boilers for both boats is being rushed at the Saginaw Iron Works, and they are expected to be completed this week.

The steamer George Stephenson and the schooner Sir Isaac Lothian Bell, which were completed last fall for John D. Rockefeller and laid up at the yard during the winter owing to the lateness of completion, are being fitted out preparatory to entering into commission at the earliest opening of navigation.

### COLLISION LAW SUIT.

The collision by which Capt. Hackett and Watchman David Kinirie, of the tug Torrent, lost their lives while passing through the St. Clair Flats canal on the night of July 17, 1895, has been before the United States Court in the trial of the suit of Bertha Kinirie the widow of the latter, against the Cleveland Transportation Co., for \$20,000 damages.

The complainant was represented by Chadwick & McIlwain, of Port Huron, the steamboat company by Harvey D. Goulder, and it is needless to say that the case has been fought to a finish at every turn of the testimony. It was concluded Saturday evening, and the jury gave Mrs. Kinirie a verdict for \$5,000.

The tug, bound up, met the steam barge Sitka and tow barge Yukon in the cut, and the testimony showed that the vessels attempted to pass each other on the port side. The Yukon was heavily loaded, and when some distance from the Torrent took a sheer from the bottom, going across to the east bank and colliding with the sheet piling. Then she took a sheer back to the west side, where

she belonged, and Capt. Hackett thought he had a clear course. Just as he was passing the Sitka, however, the Yukon sheered across the cut again. There was no time for the Torrent to back, and the captain did the only thing possible. He headed for the space between the Sitka and Yukon, and shouted to the captain of the latter to cut his towline. The call was not heeded, and the line swept the tug fore and aft, carrying away the stack and upper works, and killing Hackett and Kinirie.

It was contended by counsel for the plaintiff that the accident was due solely to the length of the towline; that it was 800 feet long, and that it should have been shortened before an attempt was made to go through the canal. Moreover, it was claimed that the Sitka did not slow down, as required by navigation laws, but was pulling the Yukon along at eight miles per hour. Mr. Goulder's main efforts were to disprove these charges, but according to the verdict his arguments were ineffectual.

### RETAIN THE PRESENT COMMISSIONER.

On March 18th the Marine Record had the following to say editorially: "The Hon. Eugene T. Chamberlain, U. S. Commissioner of Navigation, ought to be continued in office, although the change of administration will, we fear, hardly admit of Mr. Chamberlain holding down the seat which he has so worthily filled. We cannot even surmise a more worthy successor to the present Commissioner of Navigation; however, President McKinley, or rather his advisers, may possibly suggest a man equally as good to fill the position from a Republican standpoint; but to say the least it will be difficult to discount E. T. Chamberlain, and in the event of a change, which is almost certain to follow, this office, or the candidate for it, ought to be more than rigidly scrutinized." At a meeting of the board of directors of the Philadelphia Maritime Exchange, held the 22d day of March, 1897, the following preamble and resolutions were unanimously adopted and forwarded to President McKinley:

Whereas, The many questions coming before the Commissioner of Navigation for action and decision are of a technical and abstruse character, and often of far-reaching importance to the merchant marine of the United States, and affecting the maritime relations of this country with foreign nations; and

Whereas, The said office is one involving, on the part of an efficient incumbent, a thorough special knowledge only attainable after the practical experience and painstaking study of a considerable length of time; and,

Whereas, In the opinion of this exchange the office of Commissioner of Navigation should be made permanent, during good behavior, and not subject to change for political reasons, believing that frequent changes impair the efficiency of the bureau; and,

Whereas, A precedent for permanency of the chief in office may be found in several bureaus of the Treasury Department, where technical knowledge and experience is required to enable the incumbent to render efficient service, and

Whereas, The present Commissioner of Navigation has proved himself, during his incumbency, an exceptionally efficient officer, who, by indefatigable energy, unflagging interest, and the intelligent prosecution of all affairs pertaining to his bureau, has been directly instrumental in bringing about many reforms within his province, and who has shown himself so eminently qualified for the work of the bureau that his removal at this time would be a distinct loss to the government service; therefore, be it

Resolved, That, although it has been the custom of the Philadelphia Maritime Exchange scrupulously to avoid making recommendations for appointments to public office, his exceptional fitness for the office of Commissioner of Navigation impels us to depart from our time-honored practice and to earnestly petition the President to reappoint the Hon. Eugene T. Chamberlain, and continue him in office.

There are many good reasons why the office of Commissioner of Navigation should be taken entirely out of politics. The questions coming before him are technical and complicated, and to become efficient the commissioner must of necessity have actual experience. The present incumbent, by his diligent and wise administration of his bureau, has brought about beneficial results to the commercial interests of the country, and by constant communication with representatives of shipowners, trade organizations and seamen, has learned wherein many of the present laws are defective and out of date, to remedy which a number of important bills have been introduced into congress.

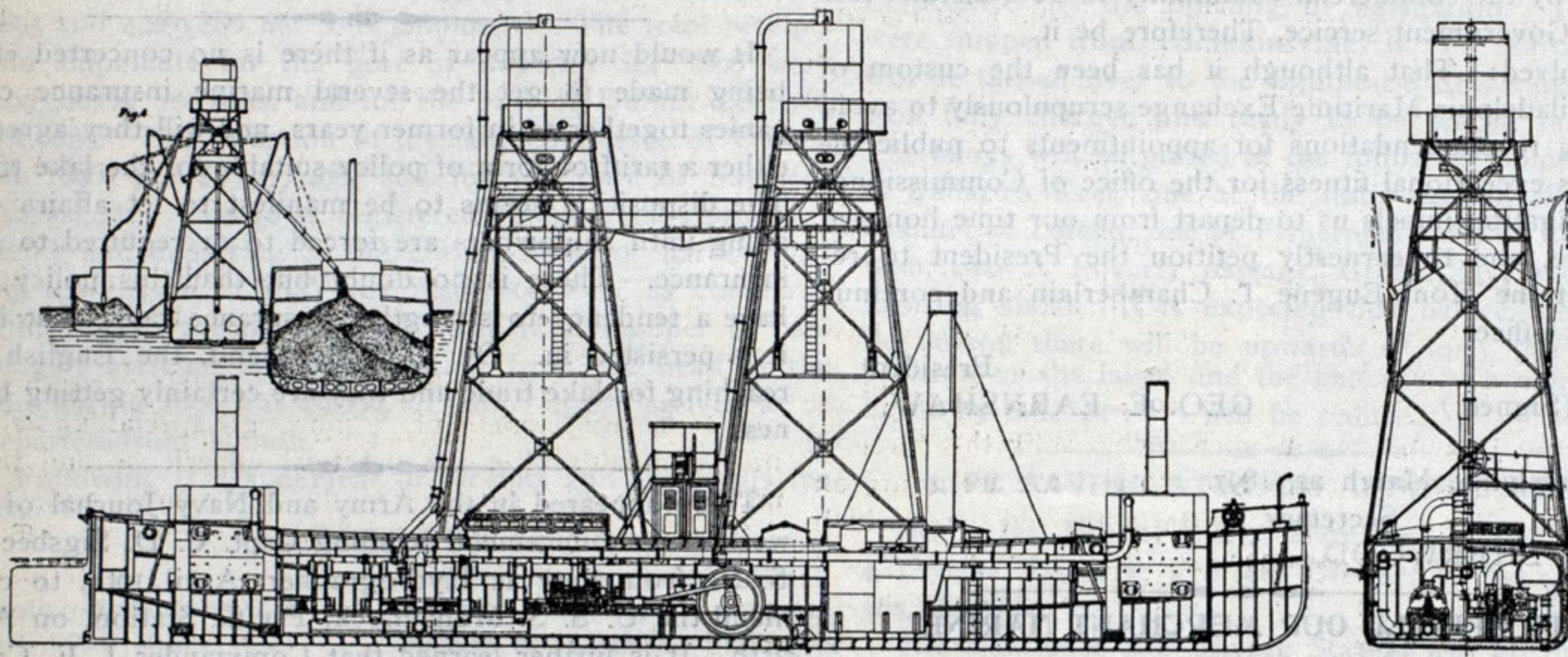


**A PNEUMATIC GRAIN TRANSFER ELEVATOR.**

What is known as Mr. Duckham's system of pneumatic lifting and conveying grain fully meets all requirements, as the flexible pipes through which the grain is lifted can be led in any direction, either vertical or horizontal, and at any angle, so that by merely moving the pipes to and for a barge may be completely cleared without requiring any labor beyond the men who are in attendance to raise, lower or swing the pipes.

In 1894 a company was formed for the purpose of purchasing these pneumatic elevators, and working them on the Danube. Through the courtesy of the "American Elevator and Grain Trade," to whom we are indebted for the cut and descriptive matter, we herewith illustrate the first of these elevators, which is called the "Principele Carol." The vessel is built entirely of steel, and is 130 feet long by 22 feet beam by 11 feet deep. The machinery consists of two multitubular marine type boilers, 9 feet 6 inches diameter by 10 feet long, and each boiler has two furnaces of 2 feet 4 1/2 inches diameter. The pneumatic engines are of the horizontal type, having a high pressure cylinder 22 inches diameter and a low pressure of 42 inches diameter. The stroke is 4 feet. There are four air cylinders, each 38 inches in diameter, and the engine will develop 470 indicated horse power.

The air is exhausted by the pneumatic engine from two large steel tanks or receivers placed at 30 feet centers amidships of the vessel, and carried on steel towers, as shown. The extreme height of these structures is 61 feet above the water level, and is sufficient to allow of the grain running by gravity through the shoots into the largest ocean vessel. The suction pipes through which the grain is lifted from the barges into the receivers, can be attached

**A PNEUMATIC GRAIN TRANSFER ELEVATOR.**

on either the port or starboard side. The grain when lifted falls to the bottom of the receivers, and the air is separated and drawn off from the top. The grain passes from the receivers through suitable ports into turn-over boxes, which are entirely automatic in their action. These boxes are divided into two air-tight sections, and oscillate on pivots, so that one side is being filled with grain as the other is discharging its load, the weight of the grain on one side or the other giving the necessary see-saw movement to the apparatus. The grain then falls onto iron trays resting on pivots fore and aft, so that it can be delivered down the incline given to the trays on whichever side may be desired. The exhaust air, after leaving the pneumatic cylinders, is delivered into quieting chambers placed at the extreme ends of the boat, and thence escapes without noise into the atmosphere. The elevator will transfer 140 tons per hour at a very low cost, the captain, with four deck hands, an engineer, and fireman, forming the crew. The pipes and shoots are manipulated by cranes attached to the towers, and they can be swung inboard when not in use. The grain is greatly improved by the aerating action of the air in the pipes, and this also has an extremely beneficial action by absorbing the moisture; the process acts as a preventive to any tendency to heating which freshly garnered grain might otherwise develop during its ocean voyage. These machines are made in sizes of from 10 tons capacity to 200 tons per hour, and are not only used for ordinary grain, but also for rice, and for the conveyance and storage of malt in breweries."

**NORWAY'S FIRST IRONCLAD.**

An ironclad for the Norwegian government was launched lately from the shipbuilding yard of Sir William Arm-

strong & Co., England. This is the first seagoing ironclad owned by the Norsemens, who in the old days swept the seas with their Viking ships. This modern vessel was christened "Harold Haarfager," after the first king of Norway, by Mme. Stang, who is herself a descendant in the thirty-third generation from King Harold. The ironclad is heavily armed and has a conning tower and two torpedo tubes, and the armor belt is from four to seven inches thick. The builders have an order for a second ironclad for the Norwegians.

**\$100,000,000 MORE FOR THE BRITISH NAVY.**

The British navy-building programme for the coming year has just been announced. The total cost of the navy for the coming year is estimated at £21,838,000, as compared with £21,823,000 for the previous year. The programme includes four battleships, three third-class cruisers, two sloops, four twin-screw gunboats, two torpedo-boat destroyers. The design of the battleships is not yet settled. The cruisers will be 2,135 tons displacement, and will carry eight 4-inch and eight 3-pounder quick-firing guns. The battleships are to be completed in the year 1899-1900; the cruisers in 1898-99. Three of the battleships, all three cruisers, and the two sloops are to be built in the Royal dockyards; one battleship and the remaining smaller vessels will be built by contract. The propelling machinery and boilers for all the vessels, except for two third-class cruisers and one of the sloops, will be ordered from private firms. Thus the total number of vessels of all classes under construction during the year will be 108. Their aggregate displacement will be about 380,000 tons, and the aggregate indicated horse power about 800,000. It is anticipated that in the next financial year 66 of

these vessels will be completed for service, including 50 torpedo boat destroyers.

It can well be understood that an annual expenditure of \$100,000,000 by the British Government is a very important contribution to the activity in iron and steel and engineering establishments.—The Iron Trade Review.

**A NEW LAKE LINE.**

It is now decided that in the near future the Baltimore and Ohio Railroad will have a lake and rail line from Chicago to the East. The company has made arrangements for two boats which will run from Milwaukee to Fairport. The company has already constructed large docks and the cargoes will be transferred to the rail route. The time for the lake line to go into operation is not as yet accurately settled upon, but the probabilities are that it will be in full operation soon after the opening of the season.

The railroad company, it is reported has chartered the steamers Parks Foster and the Ira H. Owen from J. B. Clough, of Elyria. The gross tonnage of the boats is 1,729 and 1,753 tons respectively.

The south yard of the Milwaukee Dry Dock Co. is 355 ft. on keel blocks, west yard is 312 ft. and there is a rudder pit in each dock to unship rudders; also electric lights on both docks. The officers of the company are, John Fitzgerald, president; Fred C. Starke, vice president, and W. E. Fitzgerald, secretary and treasurer. The directors are, John Fitzgerald, Fred C. Starke, John Merrill, C. H. Starke, A. M. Joys, Geo. C. Markham and W. A. Starke

**NOTICE TO MARINERS.****REGULATIONS FOR PREVENTING COLLISIONS AND FOR DISTRESS SIGNALS.**

His excellency the Governor General in Council has passed an order in council promulgating new regulations masters of Canadian vessels are required to make them of the Revised Statutes of Canada, and all owners and dian waters, which will come into effect on the 1st of July next, replacing the existing second section of chapter 79 for preventing collisions and for distress signals in Cana-selves conversant with the new regulations which will have the force of the law from the date mentioned. Chapter 79, R. S. C., with the amendments in question, has been printed, and copies can be had on application to all collectors of customs in Canada. All copies of previous regulations should be destroyed.

F. GOURDEAU,

Deputy Ministers of Marine and Fisheries.

Department of Marine and Fisheries,

Ottawa, Canada, 17th March, 1897.

Lighthouse Establishment,

Office of the Lighthouse Inspector, Ninth Dist.,

Chicago, Ill., March 29, 1897.

Notice is hereby given that about May 1st, 1897, gas buoys will be established at the following points in Lake Michigan:

Gravelly Island Shoal: At the same point and as a substitute for the black second-class can buoy, which has fore marked this danger in Poverty Island Passage.

Poverty Island Passage: At the same point and as a substitute for the red second-class nun buoy which has heretofore marked this danger in Poverty Island Passage.

Lansing Shoal: At the same point and as a substitute for the red second-class nun buoy which has heretofore marked this danger north of the Beaver Island group, Northern Lake Michigan.

Fisherman's Shoal, to the eastward of Washington Island, Northern Lake Michigan.

A gas buoy will be established on the eastern side of this danger. The exact location will be given after the buoy has been placed.

By order of the Lighthouse Board. Respectfully

J. H. DAYTON,

Commander U. S. N., Insp. L. H. Dist.

Office of U. S. Lighthouse Inspector, Tenth Dist.,

Buffalo, N. Y., March 23, 1897.

Gas Buoy, Inner End of Straight Channel, Maumee Bay, O.—Notice is hereby given that on the opening of navigation, 1897, a gas buoy, showing a fixed white light, will be placed to mark the southeast side of the inner entrance to the Strait Channel in Maumee Bay, O., in the position heretofore occupied by spar buoy No. 29 of that channel. All mariners, and especially those having vessels or rafts in tow, are cautioned to avoid fouling this buoy.

CHARLES V. GRIDLEY,

Commander, U. S. N., Inspector 10th L. H. Dist.

**SUIT FOR DAMAGES.**

Capt. Martin O'Toole has filed a bill in the Wayne Circuit Court against Timothy Hurley and John Miner, administrator of the estate of John Hurley, who was drowned in June, 1892, asking for an accounting and the appointment of an examiner by the court to examine and report upon such account. The captain states that in January, 1881, he and J. & T. Hurley became the joint owners of the steamer Empire, the firm purchasing three-quarters of \$7,500, and he paying \$1,875 for his one-quarter interest. He says that he was the master and general manager of the vessel in the seven years from 1881 to 1887, inclusive, during which time they jointly owned the steamer, which was engaged in towing and carrying freight. In the winter of 1887 the Empire was sold for \$12,000 cash, and the money paid to J. and T. Hurley. Capt. O'Toole avers that ever since then he has often tried, but always in vain, to get a settlement with the firm and that, though he turned over his accounts to the Hurleys at the end of every year, he believes the defendants owe him \$10,000 for his share of the earnings and balance due him from the sale of the steamer, out of which he got \$2,000 on account.

Col. Wm. Ludlow, U. S. A., has been detached from the 3d Lighthouse District and has succeeded Col. G. L. Gillespie in charge of harbor work at New York. Maj. D. P. Heap, U. S. A., succeeds Col. Ludlow as Lighthouse Engineer at Tompkinsville.





ESTABLISHED 1878.

Published Every Thursday by

THE MARINE RECORD PUBLISHING CO.,

Incorporated.

GEO. L. SMITH, President.

C. E. RUSKIN,	-	-	-	Manager.
CAPT. JOHN SWAINSON,	-	-	-	Editor.
THOS. WILLIAMS, Chicago,	-	-	-	Associate.

CLEVELAND,	CHICAGO.
Western Reserve Building.	Royal Insurance Building.

## SUBSCRIPTION.

One Copy, one year, postage paid,	-	-	\$2.00.
One Copy, one year, to foreign countries.	-	-	\$3.00.
Invariably in advance.			

## ADVERTISING.

Rates given on application.

All communications should be addressed to the Cleveland office.

THE MARINE RECORD PUBLISHING CO.,

Western Reserve Building, Cleveland, Ohio.

Entered at Cleveland Post-office as Second Class Mail Matter.

CLEVELAND, O., APRIL 1, 1897.

Our thanks are due to Charles D. Sigsbee, Commander U. S. N. Hydrographer, for a copy of the latest current chart of the North Pacific ocean, showing everything that it is possible to learn in that vicinity. Furthermore, we candidly admit that the Record was the first to suggest a Pacific Coast chart.

The Secretary of the Treasury may now award the life saving medal distinction to any citizen found worthy of the honor. This departure will take effect on and after June 21, 1897. In the absence of any other means of recognizing signal bravery, we highly recommend the decision whereby a cabinet officer is empowered to award suitable testimonials.

W. S. Roberts of Marine City says that he has built no new tonnage this winter nor does he contemplate doing so, as the season is now too far advanced; however, we may hope that some, if even small, tonnage will come his way at a later date. Morley & Hill, of the same port, are similarly situated, although they are and have been good wooden shipbuilders as all shipowners know.

After repeated communications the Marine Record desires it to be clearly understood that no attention will be paid to anonymous correspondence. As in the past, letters should be signed by the writers thereof; nor do we care to publish matter above the "nom-de-plume" of those who are not well known to the maritime fraternity. We now hold several letters from those who are thoroughly capable of identifying themselves, but these letters will not go into print until we learn further particulars regarding our correspondents' views.

Now, the most direct and logical methods are necessary to build up the American merchant marine. Who is "the Solomon to come to judgment," and what means are or should be advocated towards accomplishing the desired end? It would seem as if even partial discrimination would redound like a boomerang and eventually or ultimately do more harm than good. There are methods to be devised and the best friends of American shipping might adjust their thinking caps so as to evolve the means for our best advancement. As one step in this direction we could suggest that every officer of an American ship be duly examined and licensed. This would give a feeling of security to those who embraced the profession that they would not be ousted out of their situations by comparative shoeblacks or ploughboys, and it would further more trend to the upbuilding of the honorable service.

## COMMISSIONER OF NAVIGATION.

At a meeting of the Board of Directors of the Philadelphia Maritime Exchange, held the 22d day of March, 1897, the following preamble and resolution were unanimously adopted:

Whereas, The many questions coming before the Commissioner of Navigation for action and decision, are of a technical and abstruse character, and often of far-reaching importance to the merchant marine of the United States, and affecting the maritime relations of this country with foreign nations; and,

Whereas, The said office is one involving, on the part of an efficient incumbent, a thorough special knowledge only attainable after the practical experience and careful painstaking study of a considerable length of time; and,

Whereas, In the opinion of this exchange the office of Commission of Navigation should be made permanent, during good behavior, and not subject to change for political reasons, believing that frequent changes impair the efficiency of the Bureau; and,

Whereas, A precedent for permanency of the chief in office may be found in several Bureaus of the Treasury Department, where technical knowledge and experience is required to enable the incumbent to render efficient service; and,

Whereas, The present Commissioner of Navigation has proved himself, during his incumbency, an exceptionally efficient officer, who, by indefatigable energy, unflagging interest, and the intelligent prosecution of all affairs pertaining to his bureau, has been directly instrumental in bringing about many reforms within his province, and who has shown himself so eminently qualified for the work of the bureau, that his removal at this time, would be felt by the commercial community to be a distinct loss to the Government service, Therefore be it

Resolved: That although it has been the custom of the Philadelphia Maritime Exchange scrupulously to avoid making recommendations for appointments to public office, his exceptional fitness for the office of Commissioner of Navigation impels us to depart from our time honored practice, and to earnestly petition the President to reappoint the Hon. Eugene T. Chamberlain and continue him in office.

Attest:

(Signed.)

(Seal.)

Philadelphia, March 22, 1897.

Secretary.

E. R. SHERWOOD,

President.

GEO. E. EARNSHAW,

## TO UPBUILD OUR MERCHANT MARINE.

Editor of the Marine Record.

I note a recommendation of Mr. Frank Henrich of Detroit in your issue of the 25th inst, "that it would be a better plan, when the time comes, to strike at the root of the evil and tax foreign tonnage carrying American produce and merchandise a few cents per ton."

An improvement upon this plan would be, it seems to me, to pay a bounty to American ships carrying American products abroad. Such a bounty would have a two-fold benefit. First, it would provide for the shipbuilders and ship owners; and, second, it would increase the home price of the farm products to the extent of the bounty, thus offering real and not sham protection to our largest, most important, most neglected and most imposed upon industry.

Such a plan would be beneficial alike to the two great industries of our country, agriculture and shipping, now absolutely lacking in protection and being forced to bear the burdens caused by the protection afforded the manufacturing and mining industries.

On Friday last, Hon. Peter J. Otey, of Virginia, offered an amendment to the tariff bill (which was promptly ruled out of order and not allowed to be discussed) which provided for a bounty on all agricultural exports to the amount of 10 per cent. and 10 per cent. additional when shipped in American-built, American-owned and American-manned vessels sailing under the American flag. Had that amendment been adopted it would have stimulated exports of agricultural products to at least 700 millions annually thus providing \$7, 000,000 for our ships (as soon as they were built.) Such a sum would undoubtedly stimulate shipbuilding and beside, it might easily be doubled without injury to any one and be of great benefit to the country if Mr. Otey's idea of paying it in Treasury notes receivable for all Government dues were adopted.

Such a measure, while adding less than \$1.00 per capita to the circulation annually, together with its other provisions, would compel the circulation of the money we now have, more freely among the farmers and enable them in turn to more liberally purchase the products of the factories and mines.

There exists, however, another potent reason why the idea suggested by Mr. Henrich is impractical for a tax on tonnage on ships (whether foreign or American) carrying American produce and merchandise out of the country (we now have our internal traffic secured to us) is nothing more or less than an export duty and this is prohibited by the Constitution.

Respectfully,

ALEX. J. WEDDERBURN,

Master Va. State Grange and Secy. Nat. Equitable Protection Association.

Washington, D. C., March 29, 1897.

All Americans, whether of Puritan stock or otherwise, will be gratified to learn that the original log of the Mayflower is to be sent to this country. It has been in the possession of the Bishop of London, and its removal has been sanctioned by a decree of the Consistory Court of Diocese. An application to the court was made by the American Ambassador in behalf of the President and people of the United States. The only stipulations asked and granted by Mr. Bayard, were that the log shall be deposited in a suitable place, where all persons concerned may have access to it, the log is not only a record of the eventful voyage of the little vessel, but a register of births, marriages and deaths, as that property and other interests are involved. The log will reach the hands of the President and by him be disposed of according to the declared wishes of the New England states.

It would now appear as if there is no concerted effort being made to get the several marine insurance companies together as in former years, nor will they agree on either a tariff or form of policy suitable for the lake trade. The disposition seems to be manifest to let affairs drift along until shipowners are forced to or required to seek insurance. There is no doubt but that this policy will have a tendency to strengthen insurance rates, that is, if it is persisted in. On the other hand, the English are reaching for lake trade and they are certainly getting business.

There appeared in the Army and Navy Journal of last week an announcement detailing Capt. C. D. Sigsbee, U. S. N., from duty as Hydrographer, April 19th, to command the U. S. S. Monadnock, Pacific Station, on April 25th. It is further learned that Commander J. E. Craig, U. S. N., who came home from the Asiatic station in the Concord last year and who has been stationed at the New York navy yard lately, succeeds Capt. Sigsbee as Hydrographer. We may say that Commander Craig will be put on his mettle if he can in any way discount Capt. Sigsbee as the Hydrographer, U. S. N., at Washington.

The tonnage of Liverpool in 1885 was 4,278,881, and that of Hamburg 3,704,312 tons. In 1895 or a decade later these figures had changed somewhat and we now find that the Hamburg tonnage aggregated 6,256,000 tons, while that of the Liverpool was only 5,965,959 tons. Antwerp for 1895 is a very close second to Liverpool, summing up 5,340,247 tons for the year's work with Rotterdam, following up in a decidedly positive way.

## COMMERCE AT THE HEAD OF THE LAKES.

Major Clinton B. Sears, Corps of Engineers, U. S. A., has issued his report of Lake Superior commerce for the ports of Duluth and Superior during the season of 1896. The statistics are made up from the reports of vessel masters, owners or shippers, made to Major Sears in compliance with the act of March 21, 1891. Under the law, every vessel arriving in or departing from the Duluth-Superior harbor must deliver to the office of the government engineer in charge a statement of the extent and character of its cargo. The vessel master usual attends to this matter, and close watch is kept to see that the reports are made with care. The result has been that statistics of value and much reliability are obtained of the commerce of the head of the lake ports. The work of preparing the report has devolved largely upon H. C. Bellinger, who, during the season of navigation, looks almost exclusively after this branch of the work of the



engineering department. The value of the system that requires vessels to report to the government engineer is well understood by people that know that the regulations of the customs department are so liberal as to make the reports almost valueless. The figures submitted by Major Sears will be read with interest by everybody interested in the growth of the business and increase in the traffic of the head of the lakes generally.

The figures indicate that there was a large increase in the volume of lake business at the ports of Duluth and Superior during 1896 over that of 1895, both in the quantity of cargo handled and in the valuation. The valuations of commodities are based upon the average wholesale prices on board vessels for exports, and on dock for imports. The total freight tonnage of the ports of Duluth and Superior for 1896 was 7,886,833½ net tons, as compared with 6,325,351 net tons for 1895, indicating an increase for the season in all freight handled of 1,561,482½ tons.

The total valuation of all cargo handled for 1896 was \$111,676,900, as compared with \$95,000,000 for 1895, indicating an increase of \$16,676,900 for the year. The tonnage for 1896 was carried in 10,948 vessels, as compared with 10,986 vessels for the season of 1895. It will be observed that, while there was a much greater volume of cargo handled in 1896, the business was done with fewer vessels. This fact is attributed to the appearance last season of a large number of the vessels of the "400 foot class." The season of 1896 was celebrated for its record-breaking cargoes all over the lakes, and particularly from the head of the lakes.

The total receipts in net tons were 2,407,880½ tons for 1896, and the total shipments in net tons were 5,478,953 net tons, as compared with 2,035,465 net tons receipts for 1895 and 4,289,886 net tons shipments. The total receipts and shipments for the port of Superior for 1896 were 2,995,067½ net tons, and for the port of Duluth 4,891,766 net tons. The valuation of the lake commerce of Duluth for 1896 was \$59,577,498, and for the port of Superior \$52,099,402. The total registered tonnage of vessels arriving and departing in the Duluth-Superior harbor during the season of 1896 was 13,353,068 tons, as compared with 11,444,272 tons for 1895. The total number of passengers arriving at and departing from the head of the lake during 1896 was 49,690, of which 45,674 arrived at or departed from Duluth.

Following is a statement of receipts and shipments for 1896:

#### RECEIPTS.

	Duluth.	Superior.	Total.
Anth. coal, tons.....	263,212	431,031	694,243
Bit. coal, tons.....	398,911	972,798	1,371,709
Limestone, tons.....	18,842	.....	18,842
Salt, barrels.....	114,292	118,366	232,658
Machinery, tons.....	435	124	559
Manufactured iron.....	40,386	21,869	62,255
Kerosene oil, barrels.....	1,675	79,083	80,758
Gen. merchandise, tons..	116,002	53,303	169,305
Logs, M. feet.....	76,203	20,680	96,883
Fish, tons.....	737	.....	737
Cement & lime, bbls....	40,814	24,994	65,808
Sand, cubic yards.....	7,820	4,835	12,655
Building stone, tons....	9,458	1,350	10,808
Passengers .....	23,176	1,974	25,150

#### SHIPMENTS.

	Duluth.	Superior.	Total.
Iron ore, tons.....	1,981,597	165,033	2,146,630
Copper, tons.....	5,798	49,148	54,946
Flour, barrels.....	3,729,440	4,291,097	8,020,537
Wheat, bushels.....	28,925,114	20,111,692	49,036,806
Other grains.....	13,384,718	5,547,612	18,932,330
Structural iron, tons....	180	145	325
Wool, pounds.....	1,870,692	9,115,476	10,986,168
Lumber, M. feet.....	208,516	33,232	241,748
Shingles, M. feet.....	12,836	.....	12,836
Lath, M. feet.....	1,100	.....	1,100
Vessel merchandise, tons.	17,215	10,368	27,583
Passengers .....	24,498	2,042	26,540

During the season of 1896 there were 7,423 entries and departures of vessels recorded at the Duluth ship canal, and 3,525 at Superior. Of the vessels entering the Duluth canal, 3,033 were steam and 704 were sail and other vessels; departing, there were 2,972 steam and 714 sail and other vessels. There were 1,570 steam and 220 sail and other vessels recorded as arriving at Superior, and 1,512 steam and 223 sail and other vessels departing from Superior.

Over 7,000,000,000 feet of logs have been floated down the Menominee River during the past 20 years. There are at least 4,000,000,000 feet of all kinds of timber standing in the pineries today that is tributary to this river. A goodly part of this amount will probably be cut along the railroads penetrating the forests, but Menominee mills will saw lumber many years yet.

#### IN LITIGATION.

The case of the steamer B. W. Blanchard, which has been in court ever since 1891, is just where it started. The Blanchard was in the Ogdensburg Line that season and on coming down Lake Michigan, June 10, dropped the crown sheet of her boiler and was towed into South Manitou Harbor in a condition that made extensive repairs necessary and practically spoiled her season. The line sued for loss of the boat and the case went to referee, who heard some testimony and then dropped the whole proceeding for more than three years. Some one then spurred him up on the time he was taking and he at once rendered his decision, finding for the Ogdensburg line. The owners, Parker & Millen, demurred and claimed that the referee was not qualified to make a report, as it was quite certain that he had forgotten most of the testimony. On the appeal Judge Coxe sent the case to the higher court and that has now sent it back for a new trial, on the ground that it was out of court through the delay of the referee.

#### ANOTHER LAKE AND RAIL LINE.

The announcement that the Baltimore & Ohio Railway had arranged for its own lake line has created some surprise in railway circles, and complications are expected. The first boat starts on April 1, and will probably be the first vessel through the Straits of Mackinaw. Three steamers will ply between Fairport, Milwaukee and Chicago and carry cargo on through rates for the B. & O. Railroad Co.

#### AIDS TO NAVIGATION.

It is learned that eight new gas buoys will be placed in position by the opening of navigation. The buoys were shipped from Tompkinsville, N. Y., March 23, and will be turned over to the lighthouse department at Detroit fully charged and ready to be placed in position. The buoys will be placed at the following points: Three at Ballard's Reef, one at the inner end of the straight channel at Toledo, one at Fisherman's shoal, Lake Michigan, two at Poverty passage, Green Bay, and one on Lansing shoal. It is expected that before the close of the season there will be upwards of forty gas buoys in position on the lakes, and the expense of keeping private lights by lake carriers will be reduced.

#### LIFE SAVING STATION APPOINTMENTS.

No. 1, Jas. White; 2, Ben Kuhlman; 3, Henry Lafond; 4, George Flaherty; 5, Peter Dionne; 6, Jos. Leclair; 7, Jos. Gauthier.

The Kewaunee Life Saving Station will go in commission for the season of 1897, Thursday, April 1st, at noon, and the members in charge of Capt. N. Craite, will be as follows:

The following members will constitute the crew of the life saving station at Two Rivers, for the ensuing season, provided they pass the necessary requirements: Surfman No. 1, Alfred Lafond; No. 2, Antony Cayo; No. 3, Edward Nequette; No. 4, Peter Gagnon; No. 5, Oma Gauthiers; No. 6, Raymond Bavry; No. 7, August Schwaiker. Capt. Dionne will have charge of the station. The usual physical examination will take place at Two Rivers this year instead of Milwaukee, in accordance with orders from the department at Washington. The station will open April 1.

#### CONDEMNED.

The United States revenue cutter Andrew Jackson, which has done duty for nearly forty years on Lakes Michigan and Superior, is to be condemned and sold. The vessel is now lying at Milwaukee. Her present value has been appraised by a board of revenue cutter officers. As soon as the report of the Board of Survey has been turned in to the Treasury Department the vessel will be ordered auctioned off to the highest bidder. The value set by the board of appraisal will determine the lowest figure at which the authorities will permit the vessel to be taken.

The Johnson commenced her career as a revenue cutter on the lakes in 1859. She is almost as old as the Michigan, and like the latter vessel is a side-wheeler with a walking beam engine. Her speed is about ten knots an hour.

The Johnson has rendered service to commerce on the lakes which in value would buy, it is estimated, 150 ves-

sels and more of her class. During the sixties, when the lake marine was made up for the most part of sailing vessels, the old Johnson pulled off the shore many a craft when tugs or other help were miles away.

The Johnson will be replaced by the fine new steel revenue cutter Gresham. This vessel was recently built at Cleveland, and on her trial trip made over twenty miles an hour.

Notice has been sent to Capt. Alfred B. Davis that he will command the Gresham. The detail of officers for the new ship will be made out, it is reported, early in April. The non-commissioned officers of the Johnson, including the boatswain, gunner, carpenter, master-at-arms, and two quartermasters, have been transferred to the Gresham. The crew for the new cutter will be shipped for the most part at Cleveland.

Capt. Davis will bring the Gresham to Chicago. She will then go to Sault Ste. Marie and enforce the recent Treasury Department regulations regarding the navigation of the waters at that point. For the purpose of better carrying out these orders the Gresham will have as tenders two fast steam launches, each in charge of an officer. The launches will do the patrol work, taking orders from the Gresham as conditions require.

#### A MAGNETIC SENTINEL.

Lieut. F. B. Badt has patented an electro-magnetic sentinel, which is designed to give warning at a distant post of the approach of a hostile warship to a submarine mine, or to explode the mine automatically. The usual method employed for coast protection by means of explosive mines has been to sink them in the waterway to be protected, ordinarily in a narrow channel, and from two observatories on shore, connected by telephones and telegraph, the officers on duty follow, by means of range-finders, the movements of any hostile vessel. When the instruments indicate that the vessel is directly above the hidden mine, a switch is thrown which sets free an electric current, and explodes the mine. This method is expensive, as it entails keeping up two observatories, two sets of instruments, and two or more operators. Moreover, the apparatus cannot always be relied upon; it may get out of order just at the moment it is needed. It can follow the movements of only one vessel at a time, and at night, in fogs or storms, it is of little or no use.

Lieut. Badt's device is automatic in its action, and gives warning by night as well as by day. It is simple and direct in its operation, and requires but one observatory, one set of instruments, and one attendant. When arrangements are made to explode the mine automatically, the attendant can be dispensed with. An induction coil, suitably connected, is secured to the mine or torpedo, the fuse of which is fired by a powerful electric current—switched on either automatically or at the observatory. When the modern war vessel, heavily protected by iron or steel armor, approaches the induction coil, there will be a magnetic disturbance which is instantly indicated to the officer on duty at the observatory. He watches the vessel, and at the proper moment closes the fuse circuit and explodes the mine. In case an automatic device is employed, the arm of an indicator is deflected until contact is made, which causes the explosion.

The Wisconsin Central Railroad Company has concluded arrangements with the Great Lakes Steamship Company whereby a lake and rail line is established between Buffalo, Cleveland and other Lake Erie ports and St. Paul and Minneapolis and other points, via Manitowoc, Wis. The Wisconsin Central had the subject under advisement for some time but the establishment of the line became a certainty and the announcement has been made. Four first class steamers will be put into service at once.

The German naval authorities have decided to equip all the existing men-of-war in the German navy with apparatus for heating their boilers partly with oil, and the use of liquid fuel will, it is stated, be provided for in all new vessels. The oil will be stored on board in special tanks, from which it will be conducted to the furnaces by pipes, and ejected in a spray by steam. For the storage of the liquid fuel in large quantities, reservoirs holding over 100,000 gallons have been built at Wilhelmshaven, and similar arrangements are to be made at Kiel and Dantzig.



## Engine Cylinders FOR SALE.

Pair of 18x34x34 stroke steeple compound engine cylinders, complete with steam reverse link and sword arm, 6 throttle valve, exhaust shift valve, etc. Built for compounding an engine, but never used on account of change of ownership, lack of funds, etc. For full particulars address E, care of the MARINE RECORD.

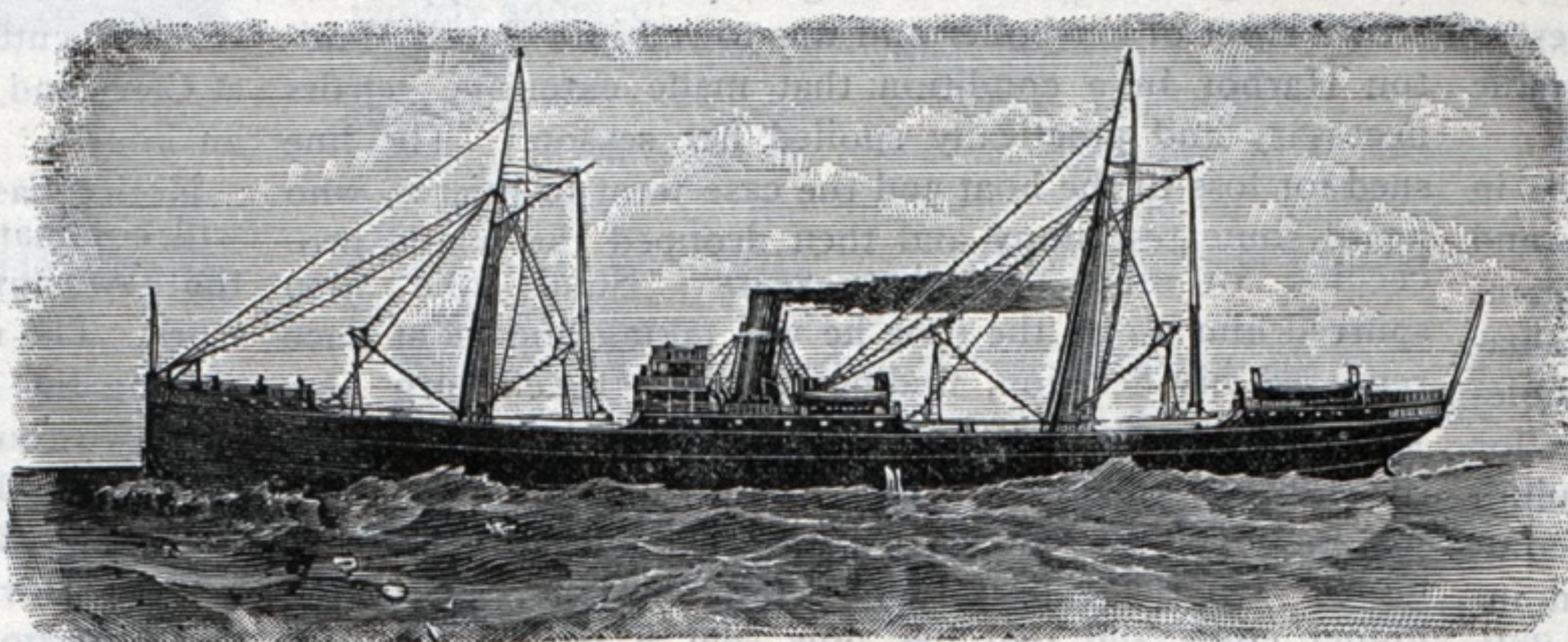
## F. W. WHEELER & COMPANY,

BUILDERS OF ALL KINDS OF

Iron, Steel, and  
Wooden Ships

FOR LAKE OR OCEAN SERVICE.

West Bay City, Mich.



F. W. WHEELER, Pres. H. T. WICKES, V. P.  
J. S. PORTER, Treas. C. W. STIVER, Sec'y.

# FRONTIER

Iron Works.

MARINE ENGINES.

DETROIT, MICH.

## WM. WILFORD'S

MATCHLESS  
WATER-PROOF CANVAS



The best in the market for hatch covers, is stronger, lighter, and more durable than any water-proof goods yet produced. It is made of a twisted thread of pure flax, which renders it very strong. It will not crack like cotton goods, which is a great advantage.

EDWARD A. BUNKER,

Room 617 27 and 29 William St., New York.



## RAINBOW PACKING

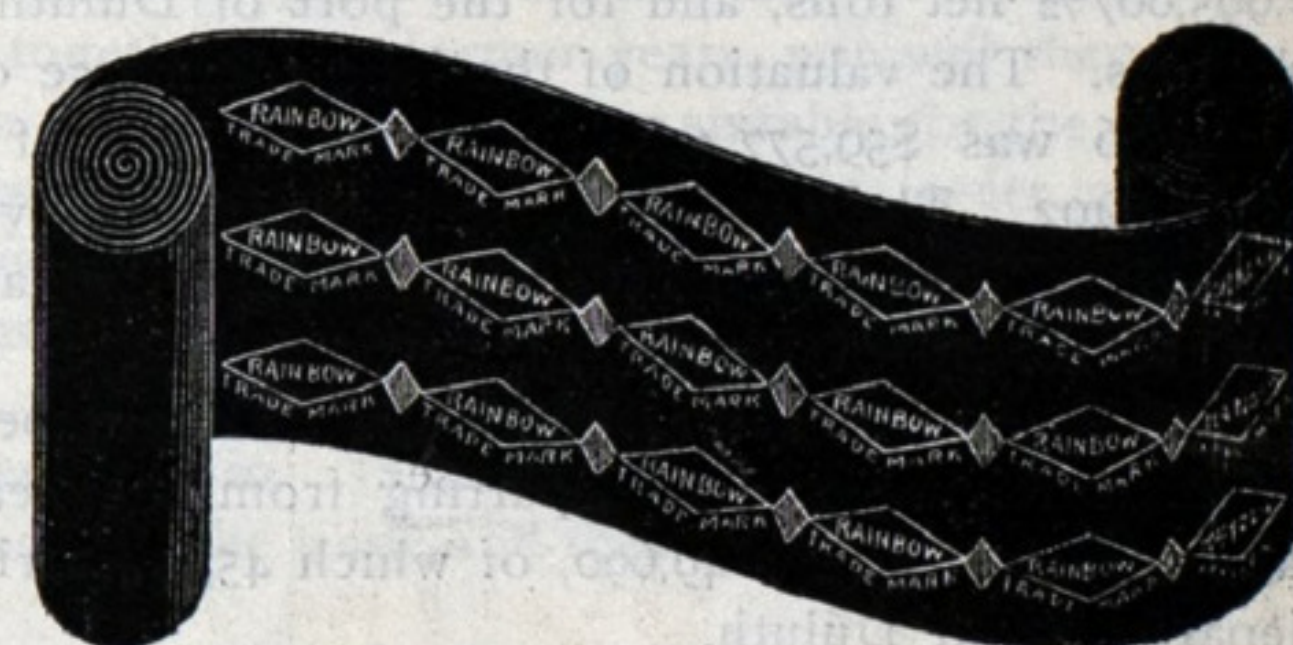
The color of Rainbow Packing is red. Three rows of diamonds in black, extending throughout the entire length of each and every roll of RAINBOW PACKING. Patented and manufactured exclusively by

Peerless  
Rubber Mfg. Co.

18 WARREN STREET,  
NEW YORK.

16-24 Woodward Ave. Detroit, Mich.  
202-210 S. Water St. Chicago, Ill.  
193-195 Bank St. Cleveland, O.

Thousands of imitators. No equal.  
Will hold highest pressure.  
Don't have to use wire and cloth to hold RAINBOW.  
Can't blow it out.



### TRADE NOTES.

The Davis & Egan Machine Tool Co., Cincinnati, O., have just opened a branch with the Cleveland Tool & Supply Co., 5 Long street, of this port.

Page Bros. & Co., Boston, Mass., manufacturers and dealers in oil and electric fixtures for vessels, signal lamps, side lamps, etc., have just issued additional plates for their handsome illustrated catalogue and price list. This is the most complete work of the kind that has come before our notice, and builders as well as owners and managers should have a copy at hand when considering supplies and changes in the lighting department of passenger cargo steamers or yachts.

Mr. A. Osier, the lake representative of De Grauw, Aymer & Co., New York, is in the city in the interest of his firm, having just returned from a western trip. He will remain here several days and then go on east to Buffalo and other points. Mr. Osier feels much encouraged regarding the business outlook, and has reason to be, owing to the receipt of several good orders, among them being a number for flags. The superiority of wool bunting flags which this firm have been turning out for several years past has resulted in a greatly increased trade in this branch of their business.

The Gas Engine & Power Co., and Charles L. Seabury & Co., Consolidated, Morris Heights, New York City, have just been awarded a contract for the building of two more harbor patrol launches for the police department of the city of New York. These launches are similar to the naphtha launches used during the past year in the department's service, which were furnished by the above company. The boats are 30 feet long, 7 feet beam, 2 feet 6 inches draft. Very strongly constructed of oak keel and frames, steam bent straight grained timbers, cedar planked, copper fastened and riveted throughout. Decks of white pine. Interior of hull finished in ash and oak, natural color of the wood, varnished. Has standing wood roof over entire cockpit, with glass windows forward. The machinery is a 6 H-P. naphtha motor. These

launches are very seaworthy for their size, and are very serviceable and satisfactory launches for the police department's harbor use.

The American Steam Packing Co., 60 Federal street, Boston, Mass., report that their foreign trade so far for 1897 is much in advance of any previous year. They have recently made two large shipments to Africa.

The Eynon-Evans Mfg. Co., 1519 Clearfield street, Philadelphia, reports increased demands and orders for their extra heavy globe, angle and check valves, of which they make all sizes from 1/4 to 20 inches.

The International Correspondence School of Scranton, Pa., have issued some new catalogues explaining the merits of their schools. These catalogues can be obtained free by addressing as above. They explain very fully the methods of teaching by the correspondence method, and anyone who is contemplating a course of study should not fail to send for a copy of their catalogue of the special study which they wish to take up.

The Roberts boiler for the passenger steamer "Martha" is rapidly approaching completion. The "Martha" was built in Yonkers by, and for, Mr. Charles E. Pearsall of Yonkers, and will have a compound engine of special construction which was designed by Thomas Fearon of Yonkers. She is expected to make unusual speed considering her model, which latter is designed for great capacity.

The Dickson Manufacturing Company, of Scranton, Pa., have commenced the construction of a new boiler shop, 130 feet wide and 22 feet long. This building will have a steel framework throughout. The sides will be covered with corrugated iron, and the roof with composition roofing on plank. The main boiler shop is about 52 feet wide and 45 feet high. Thirty feet above the ground is a runway made of substantial steel girders, which carry a 30-ton traveling crane. At one end of the main shop is a riveting tower, 25x50 feet, having a runway carrying a 20-ton crane, 50 feet above the floor level. The crane in the riveting tower runs at right angles to the one in the main shop below. Adjoining the main shop is a punch-

room, which is about 50 feet wide, extending the full length of the building. Attached to the roof trusses of this portion is a traveling crane of 5 tons capacity, which covers the whole floor surface. Adjoining the punch shop is a space for the flange fires and other furnaces, 25 feet wide and 225 feet long. All the main posts of the building are arranged so that jib cranes can be attached to them, and the trusses are arranged so that shafting and other machinery may be attached at convenient points. The steel work was designed and will be furnished and erected by the Berlin Iron Bridge Co., of East Berlin, Conn.

The torpedo boat Star made on her trial trip 32.25 knots per hour. She is the first of a fleet of eight torpedo-boat destroyers now being built for the British navy by Palmer's Shipbuilding & Iron Company. The general dimensions are 215 feet in length and 20 feet 9 inches beam. She is a twin, screw, engines supplied with steam by four water-tube boilers, all of which was found to work in a satisfactory manner.

A dispatch from Goderich says: During the past few days the citizens' committee has been busily engaged negotiating with several steamboat lines with a view to placing a line of really first-class boats between Cleveland and Sault Ste. Marie, Southampton and all points on the north channel of the Georgian Bay. The route via the islands of Lake Erie, the rivers Detroit, St. Clair and St. Mary's, Lakes Erie, St. Clair and Huron and the famous thirty thousand islands of the Georgian Bay is acknowledged the finest on the continent and should attract a large southern tourist traffic during the summer.

Thomas N. Booth, of Ashtabula, has purchased of C. E. Chisholm, of Lorain, the schooners Franz Sigel and Columbian, of 700 and 600 tons burden, respectively. The price paid is not made public. The new owner states that the schooners will engage in the Kelley Island stone trade and that Ashtabula will be the home port.



## EASTERN FREIGHT REPORT.

According to the regular report furnished the Record by Messrs. Funch, Edye & Co., New York, they state that the declining tendency in steam freights for grain has continued, and we cannot to-day quote for near-by or more distant large steamers beyond 2s. 6d. from the Northern ports to picked ports in the U. K. or on the Continent, with privilege of part general cargo, 2s. 7½d. @ 2s. 10½d. as to size to Danish port in the Baltic, and from 2s. 9d. @ 2s. 10½d. for medium-sized boats to Cork f. o. Whilst we cannot find that any new sales for full cargoes of grain have been made now since quite a long time past, the situation in respect to old trades not covered by charter remains practically unchanged from what it has been during the early months of this year, and a decline in the number of suitable boats offering may at any time create a momentary flurry in our freight market, and result in a pronounced advance in rates paid for boats suitable as to size and position. At the moment, however, the steamers offering exceed the demand, and we do not believe that the "shorts" for this month and April are nearly so numerous as they turned out to be for January and February. There is some demand for case oil and general cargo hence to the Far East, but a cargo of the former having been arranged for to Shanghai at 34c., charterers would not pay beyond 33c. for some further boats offering at the former figure. Timber freights from the Gulf ports are well maintained at former rates, the reduced enquiry being well offset by the lighter offering of tonnage.

There is no particular change to notice in our market for sail tonnage, which continues in the main firm under a limited supply and a moderate demand. A few charters have been effected from the Gulf for lumber to South American ports, and we find some demand for timber tonnage from the Gulf for Europe, but at former quotations. General cargo for the Colonies is at present slow, shippers being apparently well supplied with tonnage up to June, but for later months we can report some inquiry. Several charters have been effected for cases to the Far East, and freights on this line continue very firm, with a fair outlook for the future, as but few vessels seem to be offering. There is nothing, however, doing for petroleum to Europe. Freights for naval stores continue quiet and rather easier, in consequence of increased offerings of tonnage.

## VISIBLE SUPPLY OF GRAIN.

As compiled for The Marine Record by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Albany		35,000	100,000		10,000
Baltimore	624,000	1,568,000	123,000	145,000	
Boston	408,000	1,007,000	211,000	1,000	
Buffalo	871,000	102,000	119,000	95,000	718,000
afloat	66,000	225,000	81,000	95,000	
Chicago	10,238,000	7,689,000	5,926,000	1,334,000	157,000
afloat	324,000	4,006,000	732,000	194,000	97,000
Cincinnati			9,000		91,000
Detroit	281,000	89,000	7,000	40,000	21,000
afloat					
Duluth and Superior	5,765,000	48,000	2,105,000	864,000	1,241,000
afloat	402,000		2,000		
Indianapolis	113,000	42,000			
Kansas City	308,000	162,000	183,000	6,000	
Milwaukee	221,000	3,000	8,000	456,000	184,000
afloat					95,000
Minneapolis	14,869,000	92,000	1,006,000	26,000	94,000
Montreal	489,000	22,000	762,000	73,000	44,000
New York	1,515,000	4,070,000	1,844,000	251,000	267,000
afloat	538,000	16,000			43,000
Oswego	12,000				33,000
Peoria	28,000	109,000	56,000	7,000	19,000
Philadelphia	283,000	1,836,000	77,000		
St. Louis	521,000	1,782,000	223,000	19,000	2,000
afloat		100,000			
Toledo	973,000	1,962,000	45,000	99,000	
afloat					
Toronto	174,000		64,000		49,000
On Canal					
On Lakes					
On Mississippi		87,000	113,000		
Grand Total	39,230,000	25,152,000	13,796,000	3,705,000	3,165,000
Corresponding Date 8196	61,048,000	16,530,000	8,526,000	1,488,000	1,193,000

## NOTES.

Relative to freight charges on the lakes for the season of 1897 there is no possible means of arriving at what each individual vessel owner will do in the general cargo carrying trade.

John Sherman, Secretary of State, informed the American Shipping League when he was senator that "the reason why discriminating duties cannot be adopted in our country is because in our treaties with foreign nations, I think without exception, there is an express stipulation that no discriminating duties should be made against the countries with which we have treaties."

A rear-admiral in the American navy receives \$6,000 at sea; commodore, \$5,000; captains, \$4,500; commanders,

\$3,500; lieutenant commanders, for the first four years after date of commission, \$2,800, after that, \$3,000; lieutenants, for the first five years, \$2,400, after that \$2,600; and ensigns, \$1,400. There is a large decrease in their salaries when on shore duty.

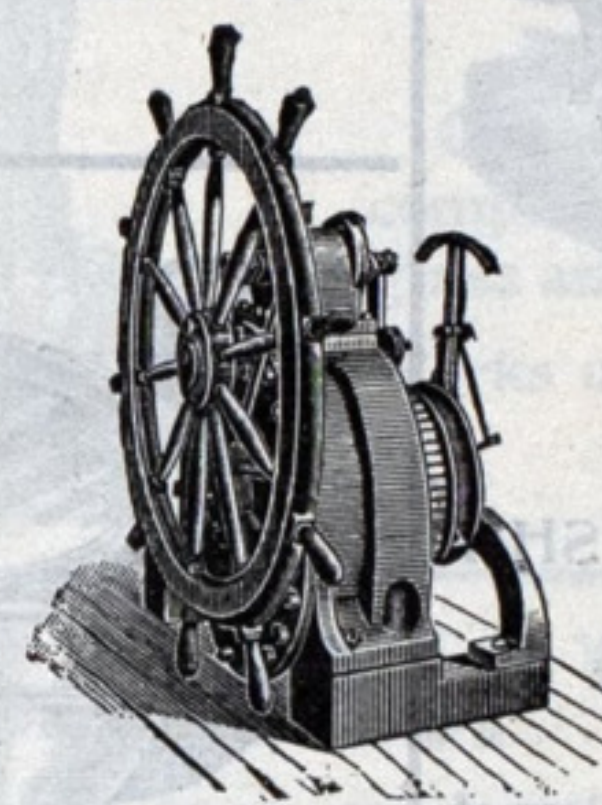
Messrs. Morley & Hill of Marine City, also McDonald Bros., La Crosse, Wis., report nothing building in their yards this quarter.

The building of the new Pittsburg, Bessemer & Lake Erie road and the acquiring of dock facilities at Conneaut Harbor by Andrew Carnegie have driven J. Pierpont Morgan to seek a new harbor for his road. The terrific cut already made in ore rates by the Carnegie line is to be followed, it is said, by a similar cut in the rates for coal. The Carnegies own the controlling interest in the New York & Cleveland Gas Coal Co. and immense shipments of coal will be made to the lakes.

## LITERARY NOTE.

The Commercial News of San Francisco, Cal., has issued a valuable pamphlet giving a list of the vessels owned on the Pacific Coast during the year 1897. In the brochure of nearly 80 pages we note that about half of the pages are given up to advertisements, among which the "Providence Steam Windlass and Capstans," manufactured at Providence, R. I., Frank S. Manton, Agent, occupy a full page.

## Queen City Hydraulic Steerer.



THE BEST AND MOST POWERFUL STEERER FOR TUGS, STEAMERS, ETC.

MANUFACTURED BY

Queen City Engineering Co.  
BUFFALO, N. Y.

Write for Prices and References.

## TOBIN BRONZE

(Trade-Mark Registered.)

Tensile strength, one inch cold drawn rod, upward of 78,000 lbs. per square inch. Torsional Strength equal to the best machinery steel. Non-corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Piston Rods, Yacht Shaftings, etc. Spring Wire, Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.

## Ansonia Brass &amp; Copper Co.

SOLE MANUFACTURERS,

Send for Pamphlet. 19-21 Cliff St., NEW YORK.

INCORPORATED 1794.

## Insurance Company of North America

CAPITAL, Paid up in Cash, - - - - \$3,000,000.00  
ASSETS, - - - - 9,651,808.08

CHARLES PLATT, President. GEORGE H. McFADDEN, Vice President.  
EUGENE L. ELLISON, 2d Vice President. GREVILLE E. FRYER, Sec'y and Treas.  
JOHN H. ATWOOD, Ass't Sec'y.

LAKE MARINE DEPARTMENT, GEORGE L. McCURDY, MANAGER,  
CHICAGO, ILL.

## Pintsch Gas Lighted Buoys.

Adopted by the English, German, French, Russian, Italian and United States Light-House Departments for channel and harbor lighting; over 500 gas buoys and gas beacons in service.

## Burn Continuously

from 80 to 365 days and nights without attention, and can be seen a distance of six miles.

Brilliant and Steady Illumination. Economical and Reliable in Operation.

CONTROLLED BY THE

## Safety Car Heating and Lighting Co.,

160 Broadway, NEW YORK CITY.

MARINE AND INLAND INSURANCE.

## Atlantic Mutual Insurance Co.

Organized 1842.

Office 51 Wall Street, NEW YORK

Insures against Marine and Inland Transportation Risks and issues policies making Loss Payable in England.

Assets over \$10,000,000 for the Security of its policies.

The profits of the Company revert to the assured, and are divided annually upon the premiums terminated during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest until ordered to be redeemed, in accordance with the charter.

W. H. H. MOORE, Pres. A. A. RAVEN, V. Pres. F. A. PARSONS, 2d V. P. J. H. CHAPMAN, Sec'y.

NEW YORK.  
PHILADELPHIA.  
BOSTON.

BALTIMORE.  
SAN FRANCISCO.  
NEW ORLEANS.

## Johnson &amp; Higgins,



Average Adjusters,  
And  
Fire and Marine Insurance.

Special Facilities for Placing Marine Lines.

Guaranty Bldg., BUFFALO, N. Y.

**SELLERS' RESTARTING INJECTOR**

LONG SERVICE, WIDE RANGE, SIMPLEST AND BEST, LONG LIFE, HOT WATER, LONG LIFTS.

For Stationary, Portable, Traction Engines, Tugboats, &c. Thoroughly Reliable - Perfectly Automatic.

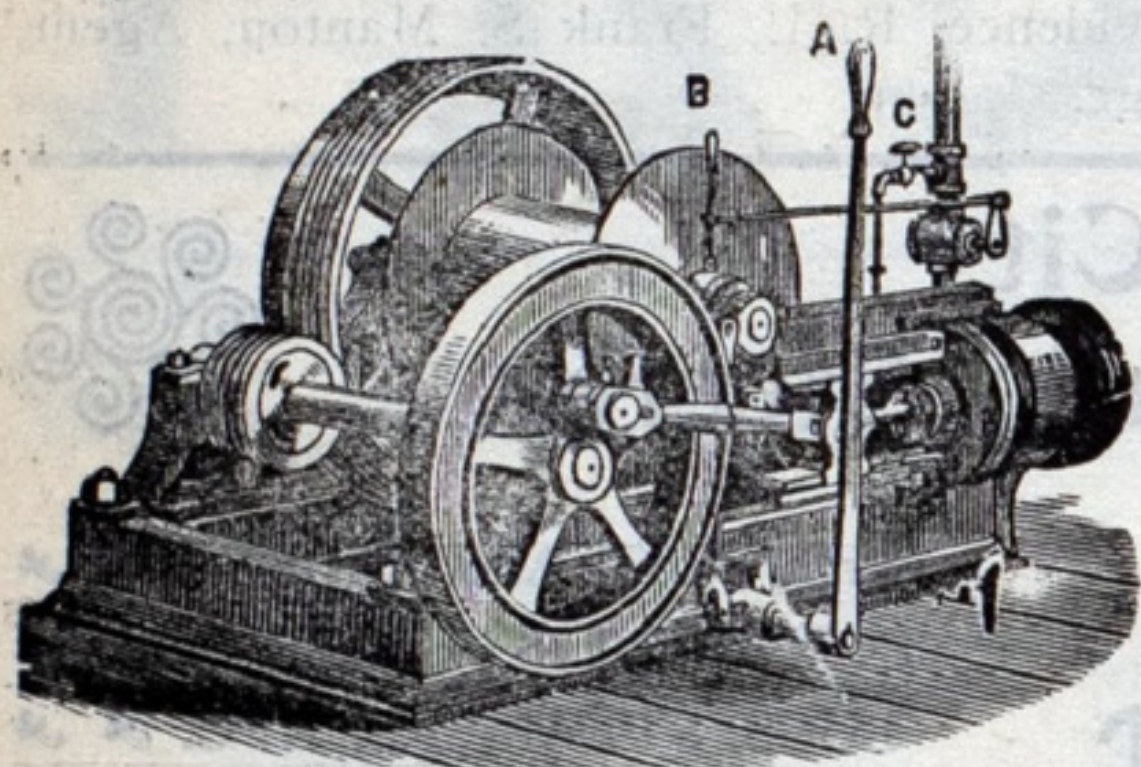
JENKINS BROS., - Selling Agents. NEW YORK, BOSTON, PHILA., CHICAGO.



**A. J. MORSE & SON.**  
  
**CONGRESS ST. BOSTON.**

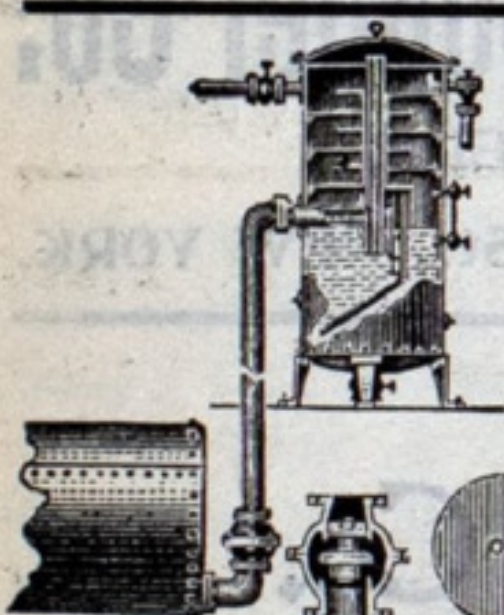
## WILLIAMSON BROS.,

COR. RICHMOND AND YORK STS.,  
Philadelphia, Pa.



HOISTING ENGINES and SHIP  
STEERING ENGINES.

With either Fractional, Spur or Worm Gear of  
Various Patterns to Suit all Purposes.



## Buffalo Feed Water Heater AND PURIFIER.

Made in all Sizes and to Suit all Conditions.

ROBERT LEARMONTH,

Send for Catalogue.

200 Bouck Ave., BUFFALO, N. Y.

## Boats for Amateur Builders.



All designs shown in my new "ALBUM OF DESIGNS" to scale as indexed or enlarged full size very cheap. SPECIAL DESIGNS TO ORDER. Patterns, Moulds and Instructions to Amateur Builders. Small Steam and Sailing Craft Built and Rigged entirely or in part. Stems and Stern Posts, Keels, Frames furnished worked in the wood. All kinds of boats set up in frame and shipped "knockdown" to any part of the world.

SEND 50 CENTS FOR 72-PAGE "ALBUM OF DESIGNS."

FRED W. MARTIN, Yacht Designer,

Station "A" Racine, Wis.

## FOR SALE OR TRADE.

25 by 6 ft. Steam Launch. 3 h. p. condensing engine, porcupine boiler, nickel plated jacket and stack. All fittings brass, nickel plated.

Interior finished in mahogany, with small toilet room aft. Nothing better can be built. Has been kept in good repair. Owner building a larger boat. For particulars address

H. B. LARSEN, Manistee, Mich.

## FOR SALE

### STEERING ENGINE

Practically new. Built by Williamson Bros., Philadelphia, in 1896. Arranged for combined steam and hand steering.

ADDRESS:

Lake Michigan Car Ferry & Transportation Co.,  
COLONY BUILDING, CHICAGO.

# Montague Iron Works Co.

ESTABLISHED 1871.

INCORPORATED 1893.

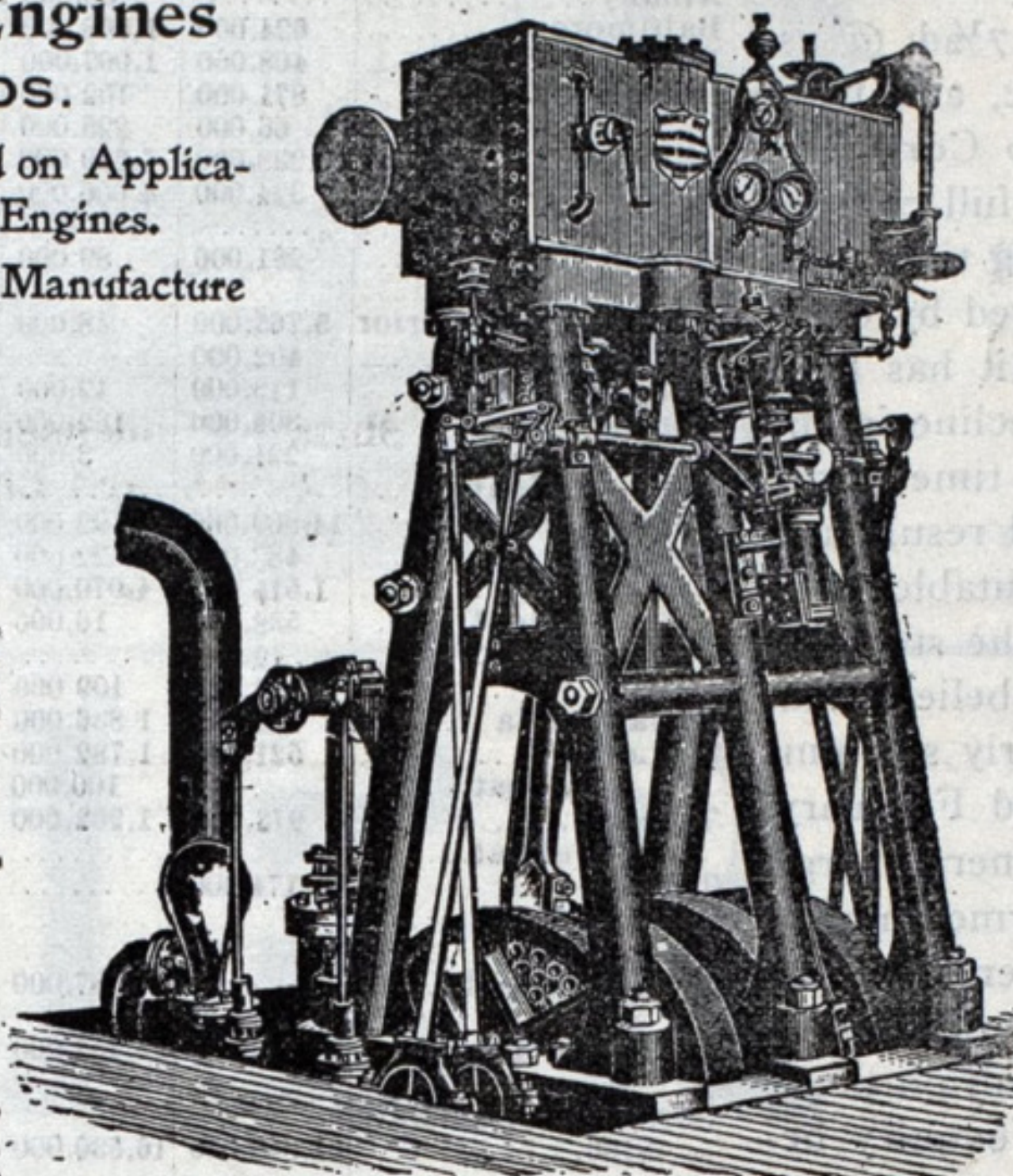
MANUFACTURERS OF

## Marine and Stationary Engines AND BOILERS OF ALL KINDS.

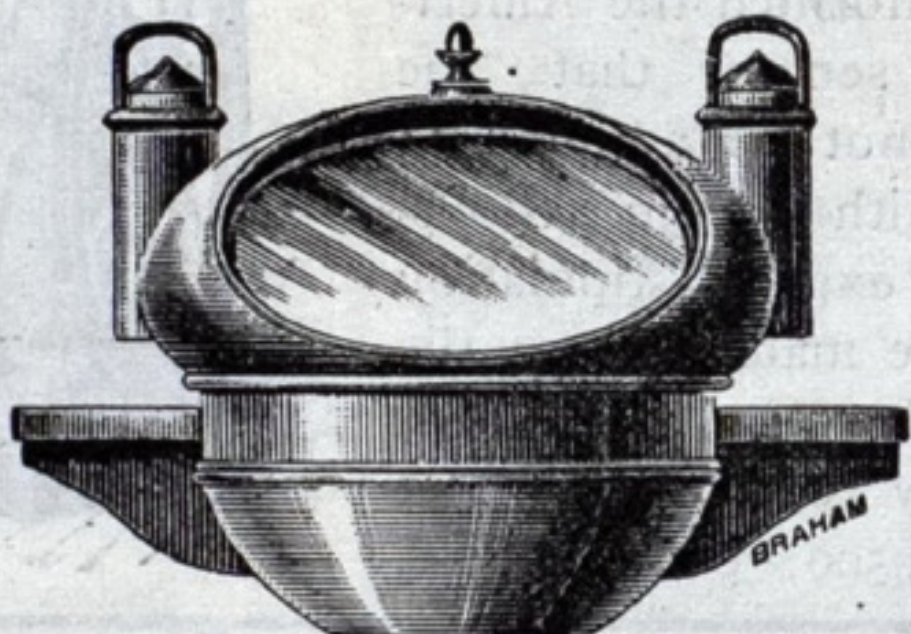
Heavy Castings a Specialty. Prices Quoted on Application. Fore and Aft Compound Marine Engines.

The Engines in the following boats are of our Manufacture

Tug, Hunter, Chicago, 15 and 28x22.  
Tug, Tacoma, Chicago, 16 and 30x24.  
Tug, Zenith, Duluth, 18 and 36x30.  
Steamer Glenn, South Haven, 14 and 28x20.  
U. S. Survey Steamer, W. S. Hancock 12 and 21x20.  
Steamer Pine Lake, Charlevoix, 16 and 30x24.  
Passenger Steamer Pilgrim, St. Clair, 14 and 28x20.  
Steam Barge Iona, Grand Haven, 24 and 46x42.  
Steam Barge M. T. Greene, Chicago, 20 and 36x36.  
Steamer H. W. Williams, South Haven, 18 and 36x30.  
Steam Barge Mark B. Covell, Manistee, 18 and 30x26.  
Steam Barge Isabella J. Boyce, Michigan City, 19 and 32x26.  
Steam Barge Luella H. Worthington, Cedar River, 19 and 36x30.  
Passenger Steamer City of Kalamazoo, South Haven, 20 and 40x30.  
Steamer Oval Agitator, Chicago, 14 and 28x20.  
Tug E. G. Crosby, Muskegon, 16 and 30x24.  
Tug Peter Coates, Sault Ste. Marie, 10 and 20x16.  
Steamer Lorain L, South Haven, 12 and 21x16.  
Passenger Steamer Lotus, Escanaba, 16 and 30x24.  
Steam Barge Sachem, Grand Haven, 21 and 38x36.  
Passenger Steamer Bon Ami, Saugatuck, 14 and 28x20.  
Steam Barge Charles A. Street, Chicago, 20 and 36x36.  
Steam Barge Edward Buckley, Manistee, 18 and 36x30.  
Passenger Steamer E. G. Maxwell, Pentwater, 14 and 28x20.  
Passenger and Freight Steamer Bon Voyage, Saugatuck, 16 and 30x26.  
Passenger and Freight Steamer Mabel Bradshaw, Muskegon, 16 and 28x26.  
The engraving represents our 20 and 36x36 Fore and Aft Compound Marine Engine. We build them all sizes and guarantee them to give satisfaction. Prices furnished on application.



MONTAGUE IRON WORKS CO., Montague, Mich.



## FRANK MORRISON,

### Compass Adjuster

and manufacturer of

### Nautical Instruments

Compasses, Barometers, Patent Logs, Binnacles, Steam  
Gauges, Marine Glasses, Engine Indicators.

All Nautical Instruments Carefully Repaired.

OFFICE WITH UPSON, WALTON & CO., 161 RIVER ST.,  
CLEVELAND, O.

## Marine Engines.

SINGLE and  
COMPOUND.

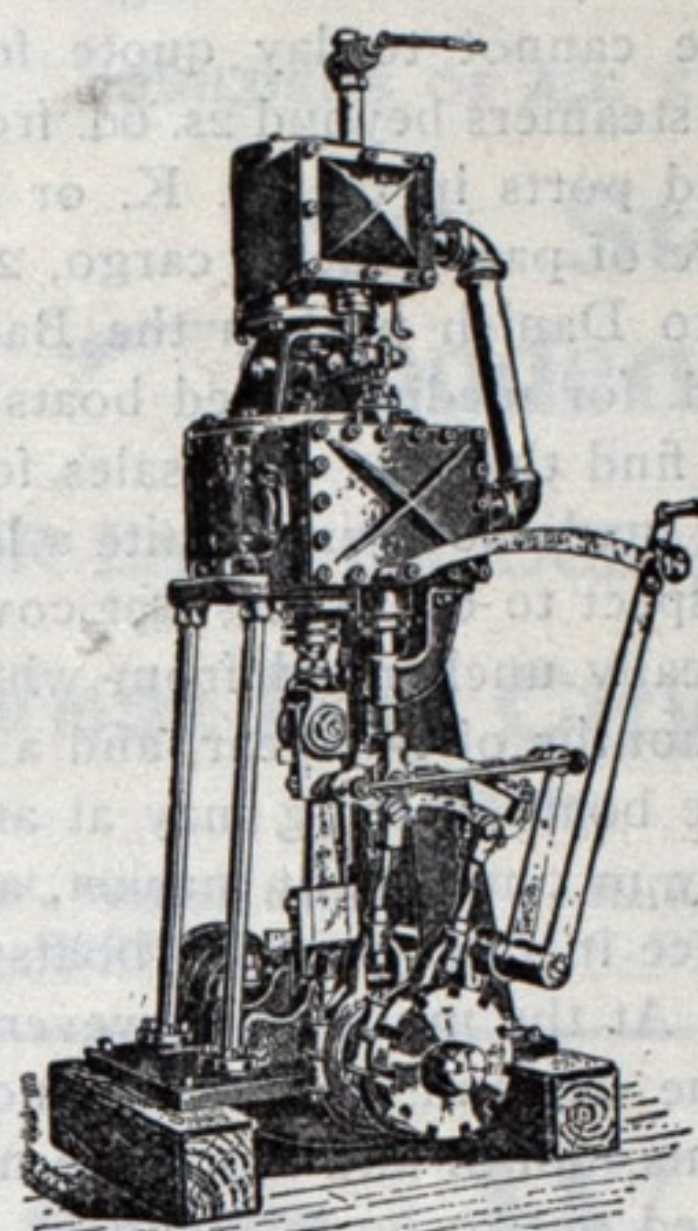
5 to 200 HORSE  
POWER. These en-  
gines are high-class  
in workmanship and  
material and moder-  
ate in price.

Send for cuts, de-  
scription and prices.

### Centrifugal Pumps

For raising coal,  
sand, etc. For dredg-  
ing, wrecking, and  
circulating.

Write for cata-  
logue.



MORRIS MACHINE WORKS,  
Baldwinsville, N. Y.

HENION & HUBBELL, Agts, 61-69 N. Jefferson St.,  
Chicago, Ill.

ABRAM SMITH.

ANGUS H. SMITH.

## Abram Smith & Son, SHIPBUILDERS,

ALGONAC, MICH.

WOODEN SHIPS  
OF ANY DESCRIPTION  
BUILT, REBUILT or  
REPAIRED.

Send for Specifications, Prices, Etc. Good  
Slips for laying up boats.

## The Cuddy-Mullen Coal Co.

Miners and  
Shippers of

## STEAM COAL

FUELING DEPARTMENT  
FACILITIES. \* \* \*

CLEVELAND HARBOR.—Car Dumper; Eight Pockets, 1000 Tons Capacity; Lighter;  
Steam Derricks.

DETROIT RIVER BRANCH.—Amherstburg; Four Pockets; Three Steam Derricks;  
Ten Pockets and Two Steam Derricks.

"SOO" RIVER BRANCH.—Two Docks, (Formerly known as the Anthony and Watson  
Docks,) Equipped with Pockets and Steam Derricks.

GOOD  
COAL.

COURTEOUS  
ATTENTION.

QUICK  
DISPATCH.

General Offices, Perry-Payne Bldg., Cleveland, O.

## The Electro-Dynamic Co.

224 Chestnut St., PHILADELPHIA.

### ELECTRICAL ENGINEERS and Manufacturers of ELECTRICAL MACHINERY.

Complete Light and Power Plants for Towns, Office Buildings, Railways and  
Private Houses.

### COMPLETE ELECTRICAL MARINE EQUIPMENTS

Installed on St. Louis, St. Paul and other steamers of the American Line, making a total of  
twenty-two direct coupled dynamos aggregating about 15,000 lights. Complete  
Lighting Plants on Yachts Columbia, Thespia, Rambler, Enterprise  
and others.

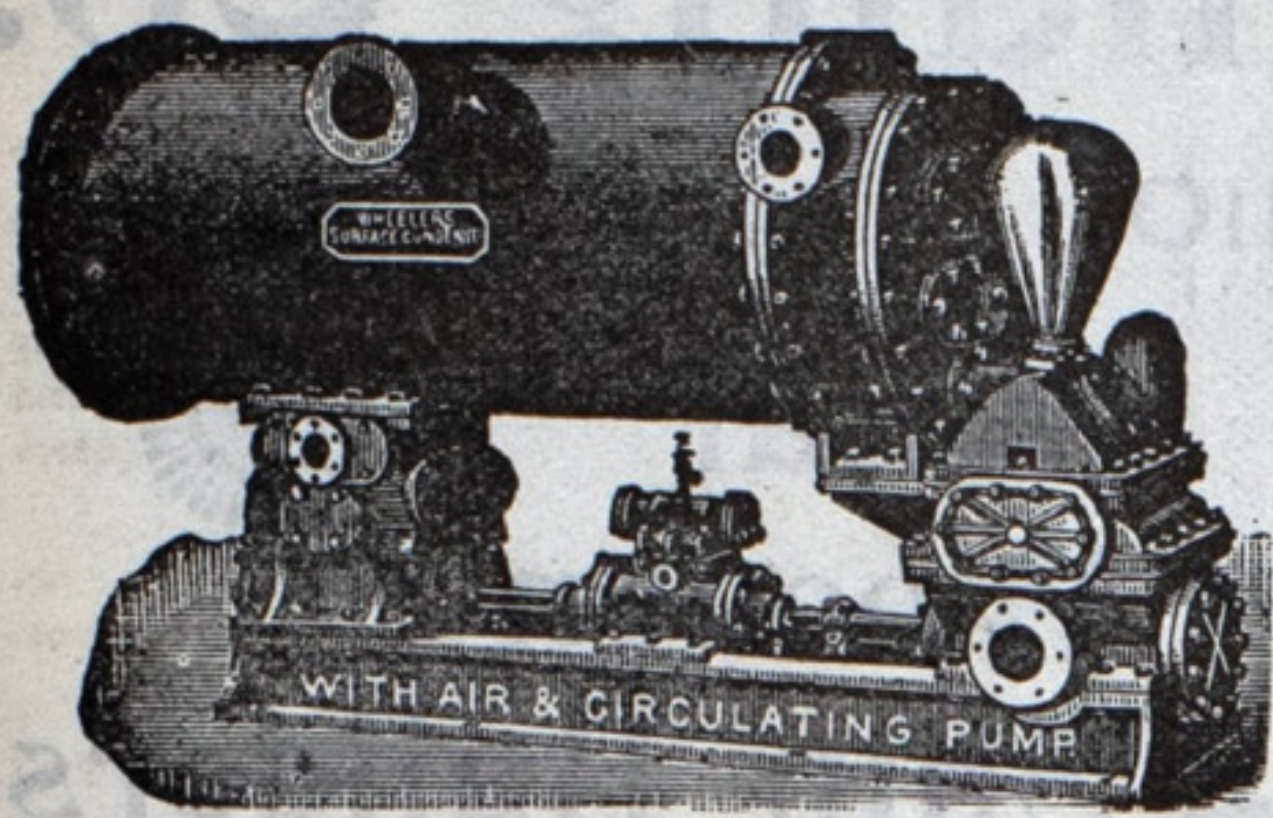
Portable Electric Drill Motors now in use at Cramp's Ship Yard, Union Iron Works, Newport News  
Ship Yard, Brooklyn Navy Yard Crescent Ship, Yard Pennsylvania Railroad.

MARINE SPECIALTIES.



# WHEELER CONDENSER & ENGINEERING CO.

120 LIBERTY STREET, NEW YORK.



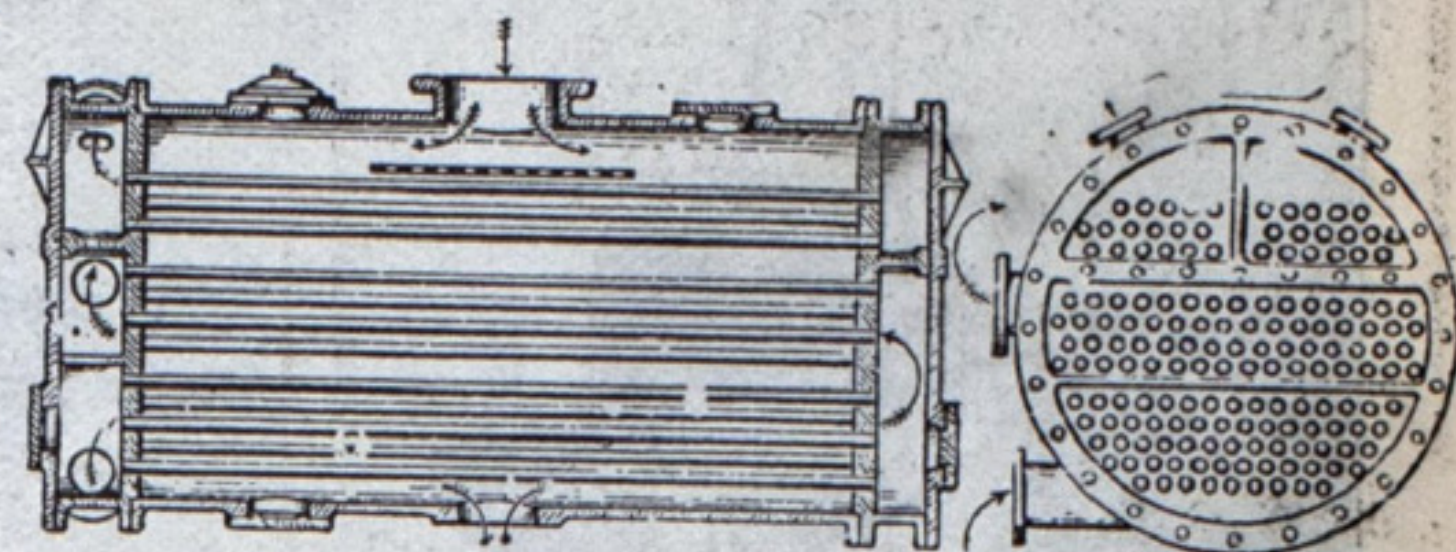
WHEELER SURFACE CONDENSER.  
MOUNTED ON COMBINED AIR AND CIRCULATING PUMPS.

## WHEELER'S IMPROVED SURFACE CONDENSERS

MOUNTED UPON COMBINED AIR AND CIRCULATING PUMPS.

SOLE PROPRIETORS AND MANUFACTURERS OF THE

Wheeler Standard Surface Condenser.  
Wheeler Admiralty Surface Condenser.  
Wheeler Light Hall Surface Condenser.  
Volz Patent Combined Surface Condenser and Feed-Water Heater.  
Wheeler Feed-Water Heater, Air and Circulating Pumps.  
Edmiston Patent Feed-Water Filter.



PATENT COMBINED SURFACE CONDENSER AND FEED-WATER HEATER.

Send for Pamphlet,  
"Machinery for Small Boats, Etc."

## The Chase Machine Co.

MACHINISTS, ENGINEERS, BLACKSMITHS.

MANUFACTURERS OF

## Land and Marine Engines and Steam Pumps.

SOLE OWNERS AND MANUFACTURERS OF THE

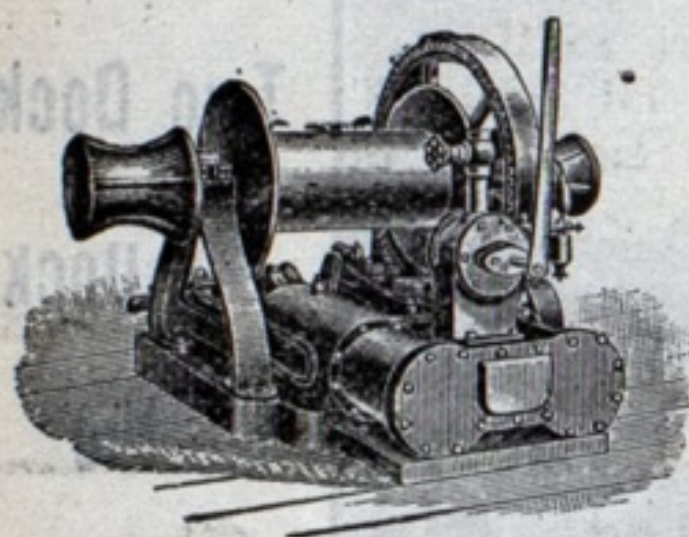
CHASE AUTOMATIC FOG WHISTLE MACHINE.

In use on nearly all Lake Steamers.

AGENTS FOR ASBESTOS STEAM, BOILER AND PIPE COVERING.

Telephone 994.

111 Elm St., CLEVELAND, O.



## Dock and Deck Hoists

ALL KINDS OF

Machinery and Friction Hoists.

Send for Prices  
and Circulars.JACKSON & CHURCH,  
Saginaw, Mich.

## John E. Thropp & Sons' Co.

BUILDERS OF

Compound and Triple Expansion

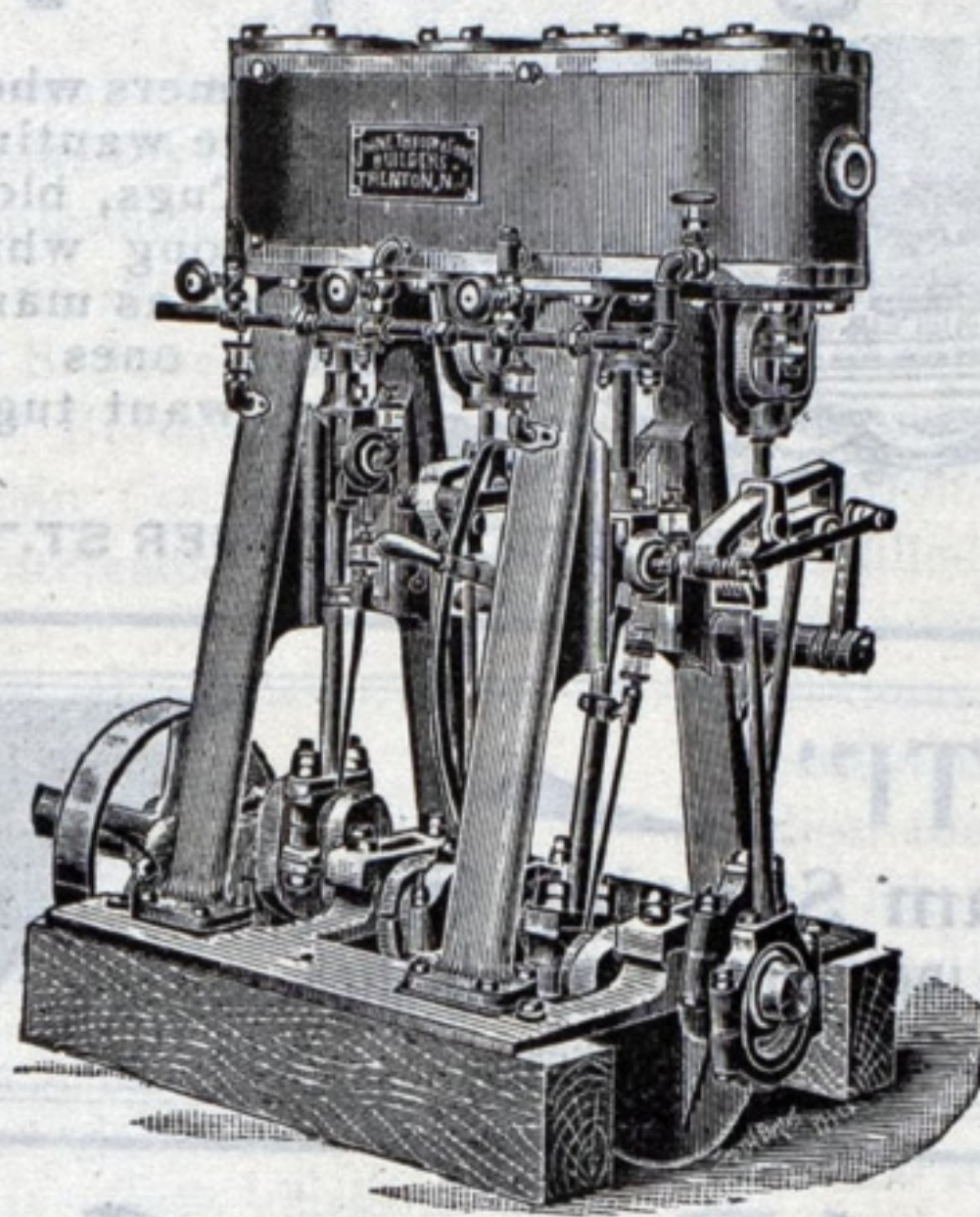
## ENGINES,

Boilers, Surface Condensers, Propeller  
Wheels, Etc.

Contracts taken for yachts and tugs  
complete. Send for photographs of En-  
gines and descriptive pamphlet.

Works on Delaware &amp; Raritan Canal Basin.

TRENTON, N. J.



## Capt. Samuel W. Gould,

Ex-Assistant Inspector of Steam Vessels, 265 Marcy Ave., Cleveland, O.

Gives instruction in Navigation and prepares candidates for the examinations for Master and Pilot's  
Licenses, before the Local Steamboat Inspectors. Also instructions given in the Safety Valve and other  
problems required by candidates for Engineer's License.

TERMS REASONABLE. TAKE WADE PARK OR PAYNE AVE. CAR.

## Eight Elegant Photogravures

Size 10x17 Inches.

Whaleback Str. Christopher Columbus  
State of Ohio & State of New York.  
Steel Ship Builders.  
Steamer Arthur Orr.  
English-built Steamer Turrett.  
Dry-Dock Representatives.  
Schooner John Fitzpatrick.

Complete set mailed to any address on receipt  
of 25 cents.

THE MARINE RECORD,

Western Reserve Bldg.,

Cleveland, O.

**\$2.00** Pays for 52 copies of  
The Marine Record in-  
cluding Supplements.

## NEVERSINK CORK JACKET AND LIFE BELT.

Warranted 24 lb. Buoyancy and full Weight of Cork, as required by U. S. Inspectors. **Consolidated Cork  
Life Preservers.** Superior to all others. **Rings Buoys and Fenders.** SAFEST CHEAPEST.  
Approved and adopted by U. S. Board of Supervising Inspectors.  
Also adopted by the principal Ocean, Lake and River Steamer Lines as  
the only Reliable Life Preserver. Vessels and trade supplied. Send for  
Catalogue.  
Awarded four medals by World's Columbian Exposition.

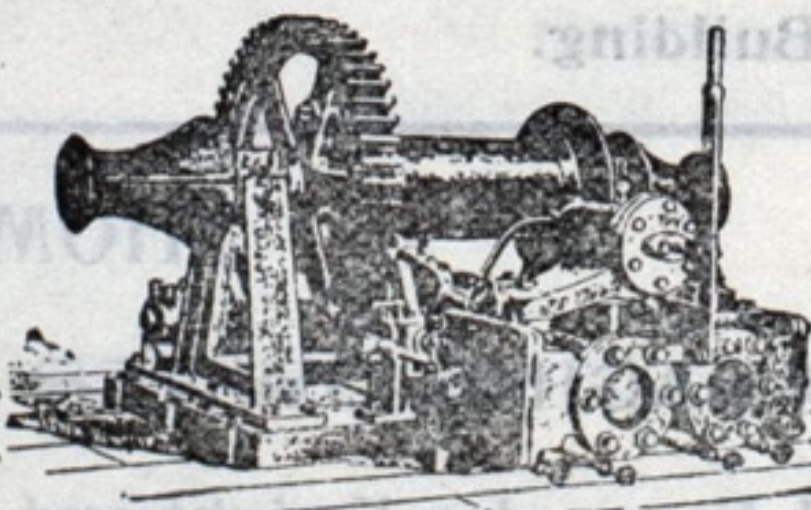
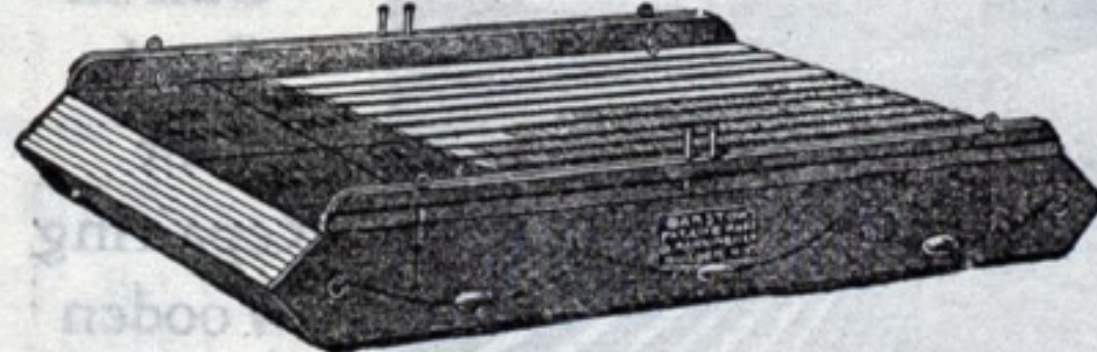


METALLIC  
and  
WOODEN  
LIFE  
BOATS.

Metallic Life Rafts, Marine Drags.

Manufacturer of Woolsey's Patent Life Buoy, which is the lightest,  
cheapest and most compact Life Raft known. Send for illustrated cata-  
logue. Get our prices before buying elsewhere.

D. KAHNWEILER, 437 Pearl St., New York City.



## HOISTING ENGINES

We build them in all sizes from new and improved  
designs. Every engine thoroughly tested before  
leaving our shop, and guaranteed to be satisfactory  
in every case.

MARINE IRON CO.,

BAY CITY MICH.

## FOR SALE, WANTED, Etc.

See also Page 15.

### WANTED.

To trade improved Toledo real estate for  
a good lumber tow barge. Address Box  
48, Sandusky, O. 10-13.

### WANTED.

To buy a freight and passenger steamer  
from 100 to 130 feet long, draft about 8  
feet, speed no less than 12 miles per hour.  
Must be a good bargain. Write and give  
full particulars. Smith Bros., Port Wash-  
ington, Wis. 10-15.

### WANTED.

An 18 or 20-inch double engine, of 24-26 h. p.  
engine in exchange for a 20-inch 36-inch by 30  
inch steeple compound engine. Dry-Dock Iron  
Works, Port Huron, Mich.

### FOR SALE.

Schooner "D. L. Filer." Capacity 500  
M. feet lumber. Can be seen any time at  
yards of Edward Hines Lumber Co., Chi-  
cago, Ill. 7-II

## J. J. Keenen,

RIVERSIDE STEAM  
BOILER WORKS.Marine, Locomotive, and  
Stationary Boilers.

MARINE WORK A SPECIALTY.  
SHEET IRON WORK OF ALL KINDS.

Repairing Promptly Attended to.

OFFICE AND WORKS, COR. COLOGNE AND FULLER STREETS,

Telephone Canal 401.

CHICAGO.

J. H. OWEN, Pres.,  
Chicago.F. H. VAN CLEVE, Sec.,  
Escanaba.Capt. GEO. BARTLEY, Supt.,  
Escanaba.

## Escanaba Towing and Wrecking Co.

ESCANABA, MICH.

Tugs, Lighters, Steam Pumps, Hawers, Hydraulic Jacks and Diving Appliances always ready

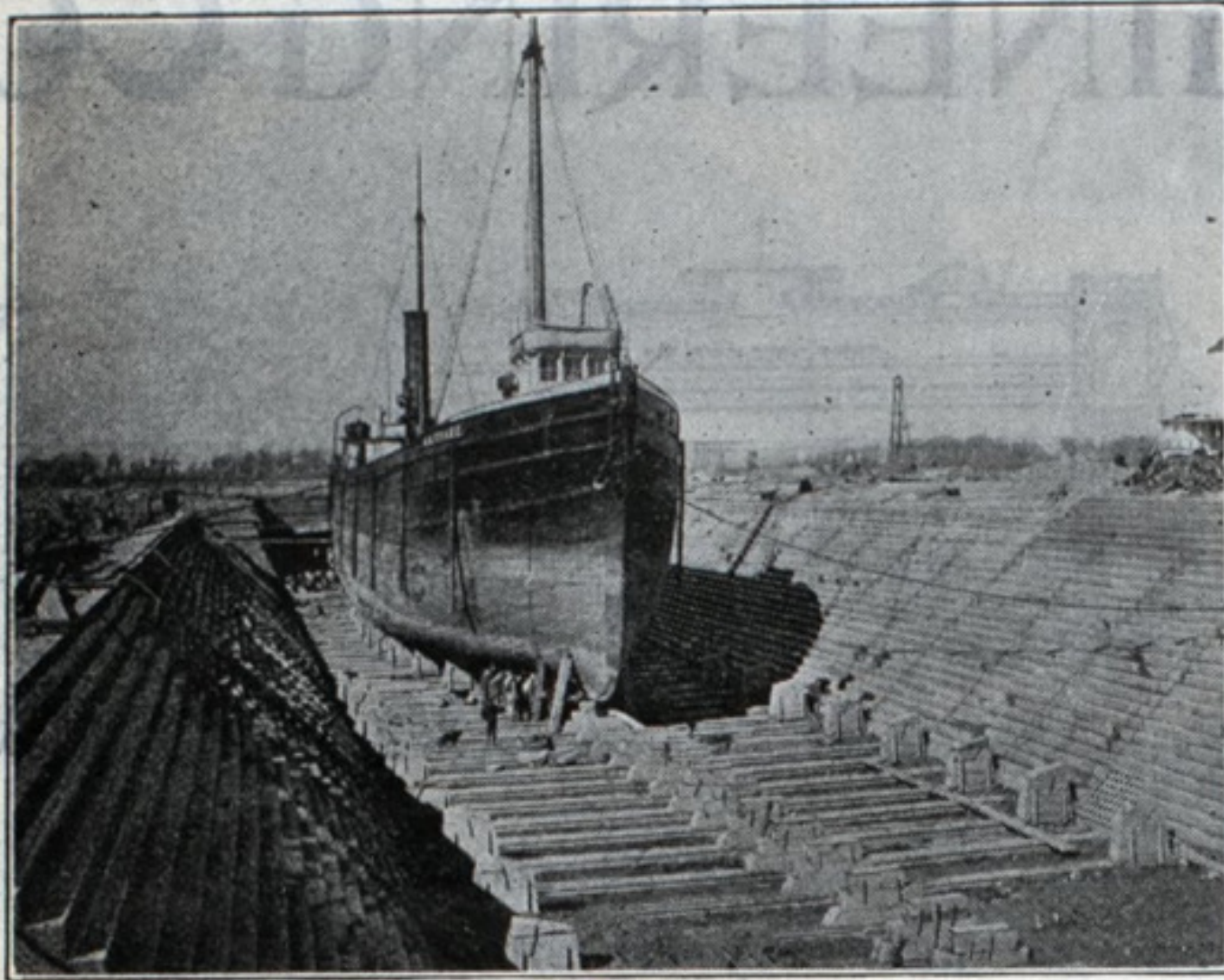
TUG MONARCH—Engine Compound, Cylinder 16 and 30 in. diameter, 30 in. stroke, steam pressure al-  
lowed 125 pounds. TUG DELTA—Cylinder 20 by 22, steam pressure allowed 105 pounds.

TUG OWEN—Cylinder 20 by 20, steam pressure allowed, 104 pounds.

CENTRIFUGAL PUMPS.

SEVEN AND FOURTEEN INCH SUCTION.





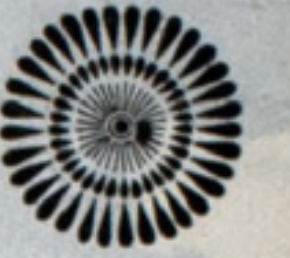
# Craig Ship Building Co.

TOLEDO, OHIO.

New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

Repairs to Metal and Wooden Ships a Specialty.

**Metal and Wooden Ship Builders.**



H. A. HAWGOOD, Pres't.  
PHILIP MINCH, Vice-Pres't.

C. A. MORGAN, Gen'l Mang'r.

J. A. SMITH, Sec'y.  
J. R. SPRANKLE, Treas.

## The Cleveland Tug Company,

First-class Tugs, Steam Pumps, Divers, Hawsers, Lifting Screws, Etc., furnished Promptly on Orders by Telegraph or otherwise.



Steamers when outside wanting our Tugs, blow one long whistle and as many short ones as they want tugs.

OPEN DAY and NIGHT.  
Long Distance Telephone 125.

OFFICE 23 RIVER ST.

The "CINCINNATI"  
Automatic Steam Steering Gear.  
Simple, Powerful Machine.  
Noiseless and Sure.  
Send for Circular.

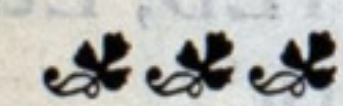
FRONTIER IRON WORKS, Detroit Mich.  
Agents for the Lakes.

## American Steel Barge Co.

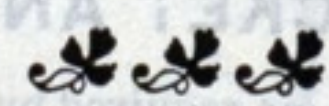
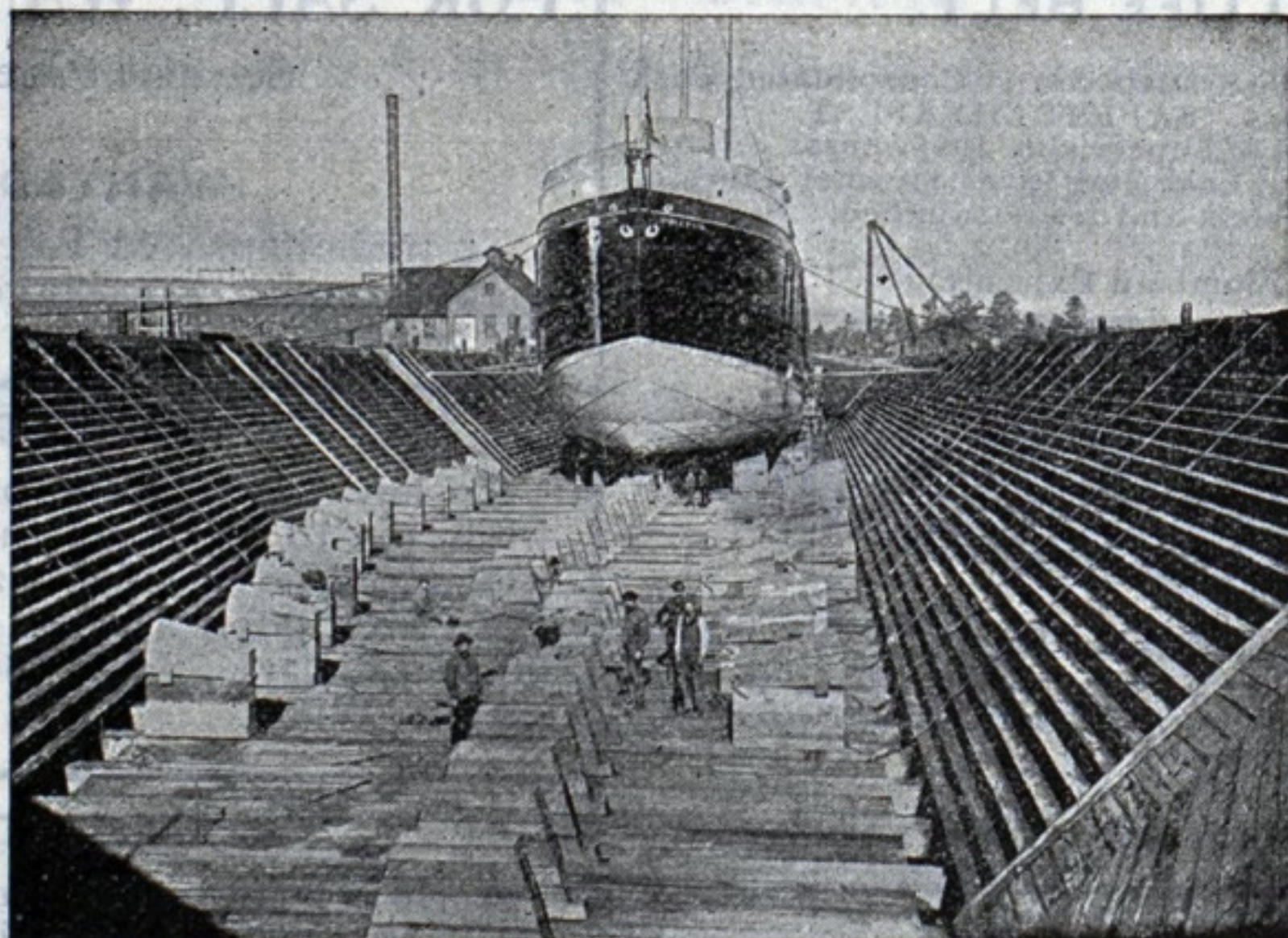
### STEEL AND METAL SHIPS

Of all Classes built on shortest possible notice at our yards at WEST SUPERIOR, WIS., and also at EVERETT, WASH.

PHOTOGRAPH OF 300-FOOT BOAT IN DOCK.



Plates and Material always on hand to repair all kinds of Metal Ships in Shortest Time.



Best Quality of Oak in Stock for Repairing Wooden Vessels of all Classes.



#### SIZE OF DOCK

Length, Extreme.....	587 feet.	Entrance, Top.....	55 feet 9 in.
Breadth, Top.....	90 " 4 in.	Entrance, Bottom.....	50 "
Breadth, Bottom.....	52 "	Depth over Sills.....	18 "

LARGEST DRY-DOCK ON THE LAKES.

Prices for Repairs and Docking same as at Lower Lake Ports.

SUPERIOR, WIS.

A Number of Propeller Wheels in Stock at Dry-Dock.

## A. Gilmore's Sons,

Dry-Docking,  
Ship Building and  
Repairing.

EAST SIDE, NEAR IRONVILLE, - - - TOLEDO, O.

Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate. Nine feet water over sill. RATES OF DOCKING, Ten Cents per registered gross ton for vessels over 200 tons. Jig Mill and Planer in connection with Dock.

'PHONE NO. 157.

Paint Your Vessel with

## Superior Graphite Paint

NO BLISTERING, CRACKING OR SCALING.

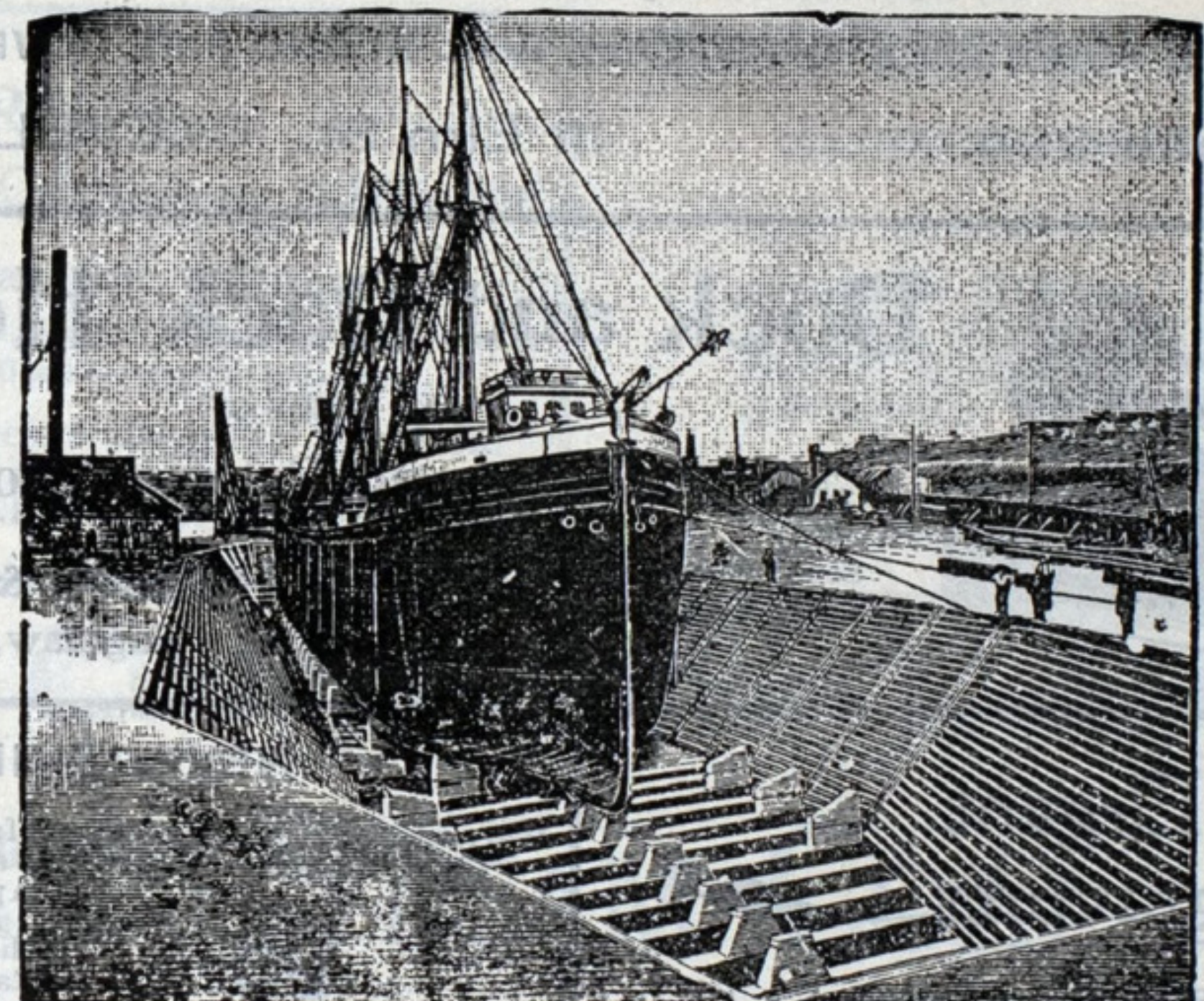
Made especially for Stacks, Decks, Sides, Hulls, and Water Compartments.  
Strictly Anti-Rust, and most durable and economical.

DETROIT GRAPHITE MFG. CO., 542 River St., Detroit, Mich.

WHITTON & BATES, Agents, 503 Perry-Payne Bldg., CLEVELAND.

## THE SHIP OWNERS DRY DOCK CO.

Largest  
DOCK  
YARD  
on the  
GREAT  
LAKES.



Capacity  
with  
Two Docks  
to Dock  
the  
Largest  
Ships on  
the Lakes.

GENERAL REPAIR WORK PROMPTLY ATTENDED TO.

Being equipped with Lucigen Lights we do work at night as well as day.

TELEPHONE 1635.

Foot of Weddell Street, CLEVELAND, O.

C. A. MACDONALD & CO.,

GENERAL MARINE INSURANCE AGENTS,

Rialto Building.

CHICAGO, ILL.

THOMAS WILSON,

MANAGING OWNER WILSON'S TRANSIT LINE,

General Forwarder, Freight and Vessel Agent,

CLEVELAND, O.

JOHN MITCHELL.

JOHN F. WEDOW.

ALFRED MITCHELL.

MITCHELL & CO.,

VESSEL AND INSURANCE AGENTS,

Office Telephone, 767.

Residence John Mitchell, 'Phone 3506. 508-509-510 Perry-Payne Bldg. Cleveland, O.

C. R. JONES & CO.,

VESSEL AGENTS,

FIRE AND MARINE INSURANCE,

Nos. 501, 502 and 503 Perry-Payne Bldg.

CLEVELAND, O.